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USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 73. T-43A AIR--ETC(U)  
JAN 77 R G POWELL

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AMRL-TR-75-50  
Volume 73

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# USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 73

T-43A Aircraft, Near and Far-Field Noise

JANUARY 1977



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AEROSPACE MEDICAL RESEARCH LABORATORY  
AEROSPACE MEDICAL DIVISION  
AIR FORCE SYSTEMS COMMAND  
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433



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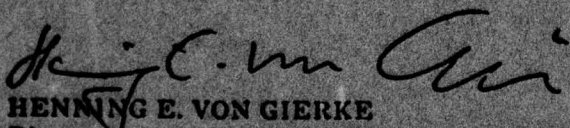
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FOR THE COMMANDER

  
HENNING E. VON GIERKE  
Director  
Biodynamics and Bionics Division  
Aerospace Medical Research Laboratory

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → The USAF T-43A is a navigator-trainer aircraft powered by two JT8D-9A turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for five power conditions. Near-field data are reported for five locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times →			

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for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, *USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application*, AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

## PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

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## INTRODUCTION

The USAF T-43A is a navigator-trainer aircraft powered by two JT8D-9A turbofan engines. The aircraft was manufactured by the Boeing Company and the engines by United Aircraft, Pratt and Whitney Division. The commercial version of the aircraft is the Boeing 737-200.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the T-43A aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. Refer to *Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individually volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975



## NEAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired near-field noise data on the T-43A aircraft during ground runup operations of its turbofan engines and its on-board auxiliary power unit, APU. For these tests, the aircraft was located on a concrete taxiway at Wright-Patterson AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the engine/APU power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the five numbered near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Also shown are seven measurement locations (one every 30°) located on a 6.1 meter radius semicircle where the exhaust of the APU is at the center. Estimates of noise levels at other locations in the near-field are difficult since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

### RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the T-43A aircraft at the six ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3 which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

**TABLE 1**  
**MEASUREMENT LOCATIONS AND TEST CONDITIONS**  
**FOR NEAR-FIELD NOISE MEASUREMENTS**

T-43A Aircraft, Ground Runups, Wright-Patterson AFB  
10 October 1974  
Tail # 20285

**Ground Crew Location**

1	Marshall
2	Fire Guard
3	Engine Start
4	FLG Chock Pull
5	Trim Adjustment
6	6.1 Meter (20 ft.) Radius, 30° Increment Mapping of APU

**Aircraft Engine Operation**

A	Both Idle
B	Both Military Power
C	Engine Off, APU On

**Meteorology**

Temperature	20 C
Bar Pressure	0.743 M Hg
Rel Humidity	44 %
Wind — Speed	1 M/Sec (2 kt)
— Direction	350 Deg

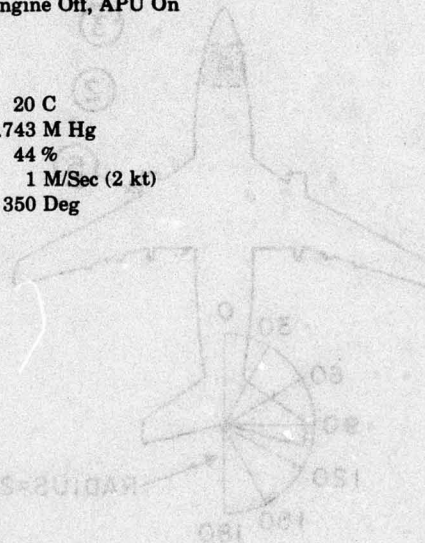
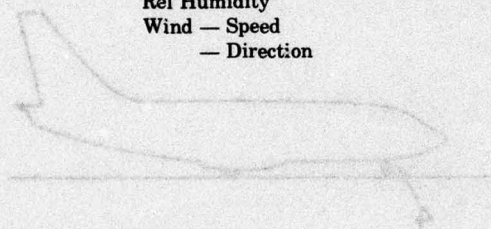
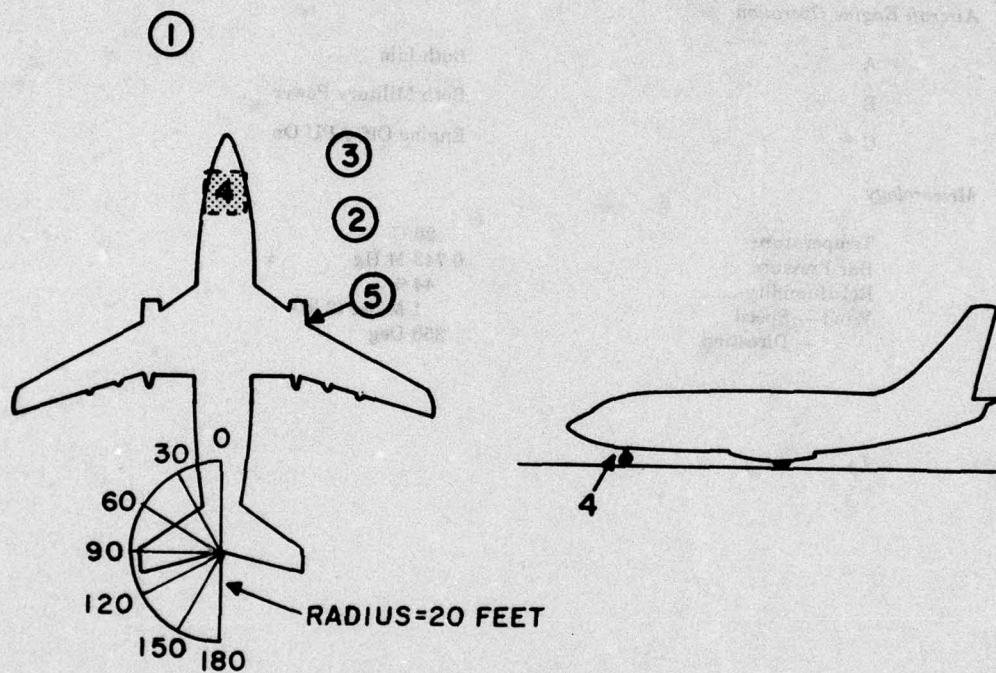


Figure 1. Near-Field Measurement Locations on  
Taxiway 21 at Wright-Patterson AFB OH





**Figure 1. Near-Field Measurement Locations on Taxiway 21 at Wright-Patterson AFB OH**

## FAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired both near- and far-field data during a 1-2 hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, (short grass) aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 75 meter radius semicircle used in surveying the JT8D-9A engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' exhaust-nozzle exits.

Table 4 provides cockpit readouts of some engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source ( $0^\circ$  angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

### RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the T-43A aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure which describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.



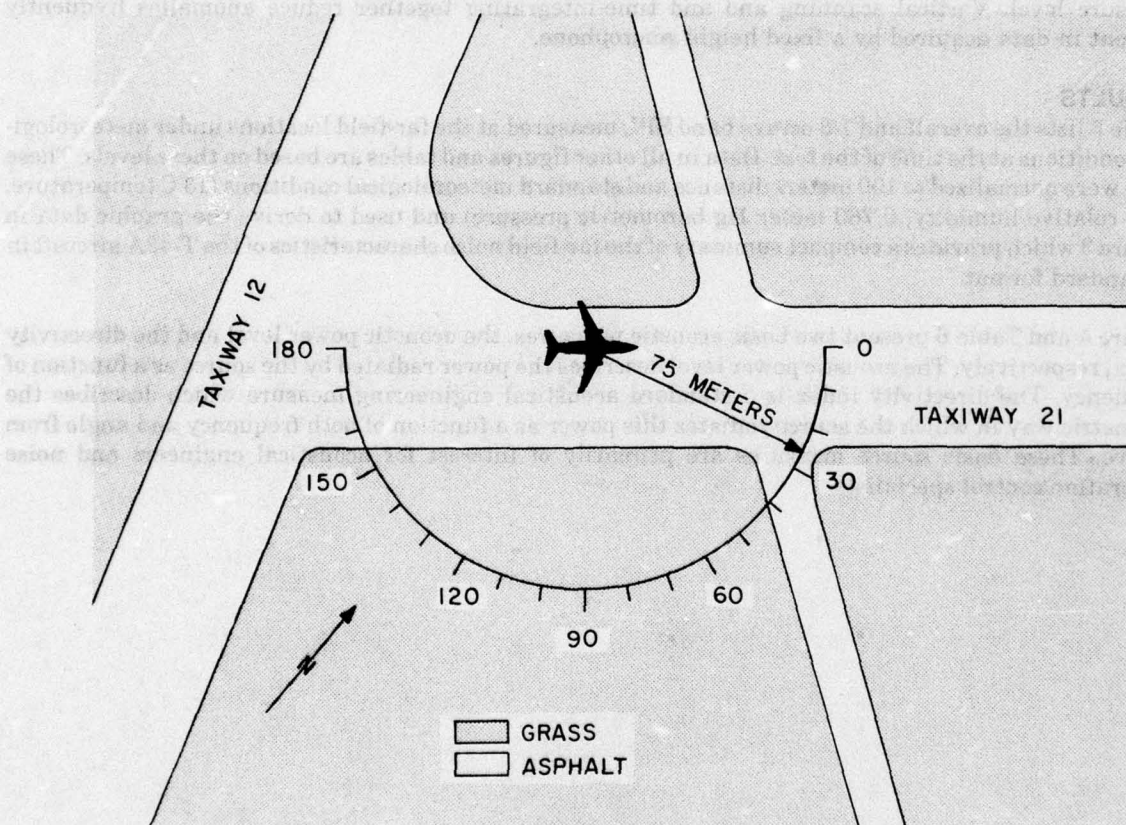
Estimates of noise characteristics for intermediate power settings (e.g., 88% engine core speed) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

No data are presented at the 170 and 180 degree locations for power settings greater than idle because of turbulent air flow behind the aircraft. Typical A-weighted levels for these angles are 10 to 20 dBA below those at the 160 degree location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.



**Figure 2. Far-Field Measurement Locations at Wright-Patterson AFB OH**

TABLE: MEASURED SOUND PRESSURE LEVEL (DB) 1/3 OCTAVE BAND		NOISE SOURCE/SUBJECT:		OPERATION:		LOCATION/CONDITION					IDENTIFICATION:	
2						1/A	2/A	3/A	4/A	5/A	5/B	
T-43A AIRCRAFT												
GROUND CREW												
NEAR FIELD NOISE LEVELS												
FREQ (HZ)		1/A	2/A	3/A	4/A	5/A	5/B					
25		71	80	75	81	87	84					
31.5		73	77	77	87	89	87					
40		78	79	80	92	91	87					
50		76	77	78	93	90	88					
63		76	80	76	87	90	90					
80		83	84	80	83	94	92					
100		87	89	82	90	96	95					
125		81	85	82	87	91	97					
160		83	87	86	86	92	102					
200		81	86	85	89	94	98					
250		82	84	85	86	93	100					
315		83	88	85	90	99	101					
400		87	88	87	92	94	102					
500		91	91	87	92	94	102					
630		84	94	87	93	95	101					
800		86	94	88	95	93	101					
1000		89	95	93	97	94	101					
1250		94	99	97	102	98	100					
1600		98	102	100	102	99	99					
2000		97	104	102	102	98	98					
2500		99	106	100	103	95	97					
3150		103	109	105	110	102	98					
4000		99	104	100	106	97	99					
5000		96	102	99	105	94	96					
6300		95	101	97	103	91	95					
8000		93	98	95	101	91	95					
10000		89	94	90	98	88	94					
OVERALL		108	114	110	115	109	112					

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.



TABLE: MEASURED SOUND PRESSURE LEVEL (DB)									
1/3 OCTAVE BAND									
NOISE SOURCE/SUBJECT: ( OPERATION: ) IDENTIFICATION:									
T-43A AIRCRAFT									
GROUND CREW									
NEAR FIELD NOISE LEVELS									
LOCATION/CONDITION									
ANGLE (DEGREES)									
DISTANCE (METERS)									
FREQ (HZ)	6/C	6/C	6/C	6/C	6/C	6/C	6/C	6/C	6/C
25	79	80	76	75	75	75	75	75	77
31.5	75	77	75	74	74	74	74	74	77
40	81	80	79	79	79	79	79	79	83
50	77	77	78	78	78	78	78	78	81
63	74	74	71	71	71	71	71	71	75
80	69	71	66	65	65	65	65	65	68
100	74	76	73	73	73	73	73	73	71
125	79	79	79	81	83	85	85	85	81
160	81	83	83	85	85	85	85	85	85
200	78	82	82	83	83	83	83	83	84
250	74	81	81	82	81	81	81	81	82
315	72	80	79	83	85	85	85	85	85
400	77	81	79	80	82	82	82	82	83
500	79	86	81	83	85	85	85	85	85
630	76	80	78	79	81	81	81	81	82
800	74	82	78	77	77	77	77	77	81
1000	75	84	77	76	76	76	76	76	81
1250	78	83	79	77	77	77	77	77	77
1600	76	80	82	77	77	77	77	77	76
2000	76	89	81	79	78	78	78	78	76
2500	75	87	80	78	77	77	77	77	74
3150	78	91	81	78	77	77	77	77	74
4000	80	94	84	81	79	77	77	77	77
5000	75	90	81	78	77	77	77	77	75
6300	75	92	81	78	76	75	75	75	75
8000	77	95	85	83	80	79	79	79	79
10000	82	103	91	86	82	80	80	80	80
OVERALL	92	105	96	94	95	95	95	95	95

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

1. NOISE SOURCE/SUBJECT: ( OPERATION: ) IDENTIFICATION:  
 2. T-43A AIRCRAFT  
 3. GROUND CREW  
 4. NEAR FIELD NOISE LEVELS  
 5. LOCATION/CONDITION  
 6. ANGLE (DEGREES)  
 7. DISTANCE (METERS)  
 8. FREQ (HZ)  
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TABLE: MEASURES OF HUMAN NOISE EXPOSURE										IDENTIFICATION:
3										OMEGA 3.2
										TEST 74-083-001
NOISE SOURCE/SUBJECT: ( OPERATION: )										RUN 01
T-43A AIRCRAFT ( )										02 APR 75
GROUND CREW ( )										
NEAR FIELD NOISE LEVELS ( )										PAGE H1



TABLE: MEASURES OF HUMAN NOISE EXPOSURE										IDENTIFICATIONS:	
3										OMEGA 3.2	
NOISE SOURCE/SUBJECT: ( OPERATION: )										TEST 74-003-002	
T-43A AIRCRAFT ( )										RUN 01	
GROUND CREW ( )										02 APR 75	
NEAR FIELD NOISE LEVELS ( )										PAGE H1	
LOCATION/CONDITION -----											
ANGLE (DEGREES) -----											
DISTANCE (METERS) -----											
HAZARD/PROTECTION											
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR											
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR											
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)											
NO PROTECTION											
OASLC	90	102	94	93	94	95	94	95	94		
OASLA	89	104	94	91	91	91	91	91	90		
T	202	15	85	143	143	143	143	143	170		
MINIMUM OPL EAR MUFFS											
OASLA*	66	80	71	70	71	71	71	71	70		
T	960	960	960	960	960	960	960	960	960		
AMERICAN OPTICAL 1700 EAR MUFFS											
OASLA*	62	77	67	66	66	66	66	66	66		
T	960	960	960	960	960	960	960	960	960		
V-51R EAR PLUGS											
OASLA*	62	75	66	65	67	67	67	67	67		
T	960	960	960	960	960	960	960	960	960		
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS											
OASLA*	49	64	54	52	52	53	52	53	52		
T	960	960	960	960	960	960	960	960	960		
H-133 GROUND COMMUNICATION UNIT											
OASLA*	61	75	66	63	63	63	63	63	62		
T	960	960	960	960	960	960	960	960	960		
COMMUNICATION											
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)	81	90	84	83	85	86	84	85	84		
PSIL											
ANNOYANCE											
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNOB)											
TONE CORRECTION (C IN DB)	105	118	108	106	106	106	106	106	105		
PNLT	1	2	0	0	1	1	1	1	1		
C											

\* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 4

# TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS

T-43A Aircraft, Ground Runups, Wright-Patterson AFB  
10 October 1974  
Tail # 20285

## *Aircraft Engine Operation*

Idle	Both Engines 1.05 EPR, Engine Pressure Ratio 34 % NC, Core Speed 1050 LBS/HR FF, Fuel Flow
80% Engine Runup	Both Engines 1.50 EPR 80 % NC 4800 LBS/HR FF
85% Engine Runup	Both Engines 1.70 EPR 85 % NC 5800 LBS/HR FF
90% Engine Runup	Both Engines 1.84 EPR 90 % NC 7000 LBS/HR FF
Takeoff Rate Thrust	Both Engines 2.01 EPR 97 % NC 8000 LBS/HR FF

## *Meteorology*

Temperature	20 C
Bar Pressure	0.743 M Hg
Rel Humidity	44 %
Wind	Calm



TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																		
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																		
NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) IDENTIFICATION:																		
( T-43A AIRCRAFT ) TEMP = 20 C ) )																		
( JT8D-9 ENGINE ) BAR PRESS = .742 M HG ) )																		
( FAR FIELD NOISE ) REL HUMID = 44 % ) )																		
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< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																				IDENTIFICATION:	
5																				OMEGA 1.4	
1/3 OCTAVE BAND																				TEST 75-002-049	
DISTANCE = 75 METERS																				RUN 02	
NOISE SOURCE/SUBJECT:																					
( OPERATION: )																					
( 80% RPM )																				TEMP = 20 C	
( 1.5 EPR )																				BAR PRESS = .742 M HG	
( BOTH ENGINES )																				REL HUMID = 44 %	
( FREE FLOW )																				PAGE 2	
FREQ																					
( (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180		
( 25	73	74	76	75	77	77	77	78	80	81	80	83	85	87	93	97	99	97			
( 31.5	75	76	77	77	77	77	77	77	79	81	83	84	85	87	92	96	100	98			
( 40	77	79	79	80	79	79	79	82	81	84	86	87	88	90	96	100	102	99			
( 50	76	78	78	79	79	80	82	82	85	86	88	88	88	92	97	103	104	97			
( 63	81	80	81	81	81	82	83	84	86	87	88	90	91	95	100	104	106	97			
( 80	82	83	81	82	82	84	87	87	87	87	88	92	93	96	102	107	107	96			
( 100	85	85	83	85	84	84	87	88	90	91	94	96	99	105	110	111	98				
( 125	86	85	85	86	83	84	85	88	89	91	93	96	98	103	110	111	99				
( 160	88	86	88	86	84	84	87	88	90	91	94	96	98	102	109	110	101				
( 200	90	88	89	88	82	84	85	85	86	88	91	92	96	98	103	107	96				
( 250	88	88	89	87	81	82	83	83	83	86	88	91	92	95	97	97	104	94			
( 315	86	87	88	86	81	80	79	81	83	86	87	90	94	97	95	99	92				
( 400	86	87	87	86	82	79	79	81	85	87	87	91	93	95	94	96	90				
( 500	86	86	86	84	82	80	80	82	86	89	89	92	93	95	94	95	87				
( 630	85	85	86	83	83	81	80	83	87	89	89	92	92	94	93	93	87				
( 800	85	86	87	83	84	81	80	83	86	88	89	91	92	92	92	92	91	84			
( 1000	88	89	88	85	85	82	82	83	85	88	89	90	91	91	91	91	89	81			
( 1250	87	89	88	86	86	84	84	84	85	87	89	90	89	89	89	89	87	79			
( 1600	89	90	89	87	87	85	86	86	85	88	89	90	89	89	88	85	78				
( 2000	88	89	88	86	86	84	84	84	87	88	90	91	89	88	87	84	77				
( 2500	92	92	92	91	90	88	88	88	87	89	89	91	91	88	86	84	82	76			
( 3150	101	102	103	102	100	96	98	96	95	94	96	96	93	90	88	86	80				
( 4000	93	92	91	89	89	86	87	86	90	91	95	95	91	86	84	82	75				
( 5000	93	93	92	89	89	86	87	85	87	88	94	95	91	85	83	80	74				
( 6300	95	96	94	93	91	89	89	87	87	88	91	92	89	84	81	79	73				
( 8000	89	89	88	85	85	82	83	81	84	85	90	90	87	81	78	76	70				
( 10000	86	87	87	85	84	81	82	79	77	80	85	85	82	77	74	71	64				
( OVERALL	104	105	105	104	103	100	101	101	101	103	105	106	108	111	116	118	108				

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.



[illegible]

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
NOISE SOURCE/SUBJECT:																			
T-43A AIRCRAFT																			
JT80-9 ENGINE																			
FAR FIELD NOISE																			
OPERATION:																			
90% RPM																			
1.84 EPR																			
BOTH ENGINES																			
FREE FLOW																			
METEOROLOGY:																			
TEMP = 20 C																			
BAR PRESS = .742 M HG																			
REL HUMID = 44 %																			
IDENTIFICATION:																			
OMEGA 1.4																			
TEST 75-002-049																			
RUN 04																			
13 MAY 75																			
PAGE 2																			
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	75	77	78	79	80	79	82	82	83	83	86	91	93	98	102	103	103	101	
31.5	78	79	79	79	80	81	82	83	86	87	90	92	93	99	103	103	103	102	
40	80	80	81	83	82	84	85	86	90	90	91	93	97	102	105	107	107	102	
50	82	80	82	81	83	84	85	85	89	89	92	94	99	104	108	107	102		
63	84	85	85	85	85	86	88	89	90	91	93	96	101	108	110	109	103		
80	86	88	86	87	85	87	90	91	92	93	95	98	103	110	112	110	101		
100	90	90	86	89	88	89	92	92	96	98	99	101	105	113	116	113	103		
125	91	92	90	89	88	90	91	92	95	97	98	102	106	113	118	113	102		
160	95	94	94	92	90	91	91	93	96	98	100	103	106	112	120	116	102		
200	93	93	93	92	89	89	89	91	92	95	96	100	104	108	115	114	101		
250	91	92	94	91	88	88	88	89	90	94	95	99	103	107	111	112	101		
315	92	93	93	91	87	86	87	87	89	92	95	98	101	106	106	108	98		
400	93	94	94	93	87	86	88	88	90	92	95	98	98	104	106	105	96		
500	91	91	92	92	88	87	89	89	91	93	96	99	99	104	105	103	94		
630	90	90	92	91	89	87	89	90	92	94	97	99	99	104	103	101	91		
800	88	89	90	89	88	87	89	89	92	93	97	99	99	103	100	98	88		
1000	88	88	90	90	89	88	90	90	92	93	97	99	99	102	100	96	85		
1250	87	86	88	89	89	89	90	91	92	93	96	99	98	100	98	94	82		
1600	88	89	89	89	90	89	91	92	92	94	97	98	98	99	97	92	81		
2000	87	86	87	87	88	87	89	89	92	94	97	98	97	98	97	91	80		
2500	89	87	86	86	88	86	88	89	92	94	96	96	96	96	95	88	77		
3150	98	97	95	95	94	95	95	91	94	96	98	99	96	96	94	87	76		
4000	94	93	91	91	91	91	91	90	93	95	98	99	96	94	93	85	75		
5000	87	86	84	84	86	84	87	87	90	93	96	96	92	91	90	82	72		
6300	90	88	87	86	87	86	87	85	87	90	93	94	90	89	87	80	70		
8000	85	84	83	81	82	82	82	81	84	87	90	90	87	86	84	76	68		
10000	81	79	78	76	78	76	77	77	78	82	85	86	82	80	80	72	65		
OVERALL	105	104	104	103	102	102	103	104	106	108	110	112	114	120	125	122	112		
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																			

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.



LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

IDENTIFICATION: OMEGA 1.4  
 TEST 75-002-049  
 RUN 01  
 METEOROLOGY: TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 PAGE 6  
 NOISE SOURCE/SUBJECT: T-43A AIRCRAFT  
 JT80-9 ENGINE  
 FAR FIELD NOISE  
 DISTANCE = 100 METERS  
 OPERATION: IDLE POWER  
 1.05 EPR  
 BOTH ENGINES  
 FREE FLOW

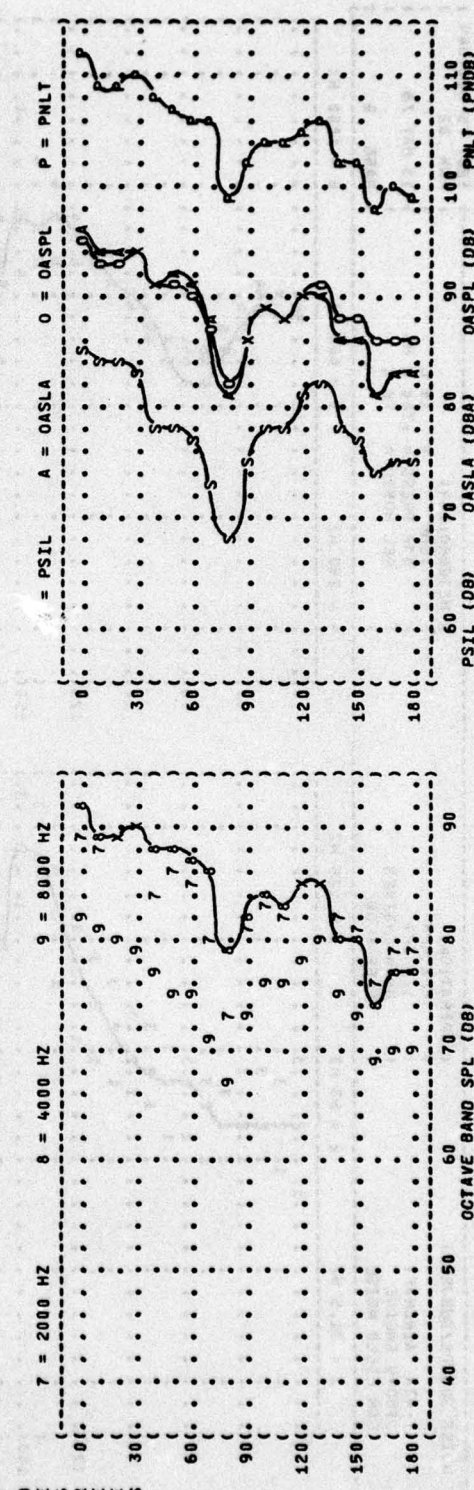
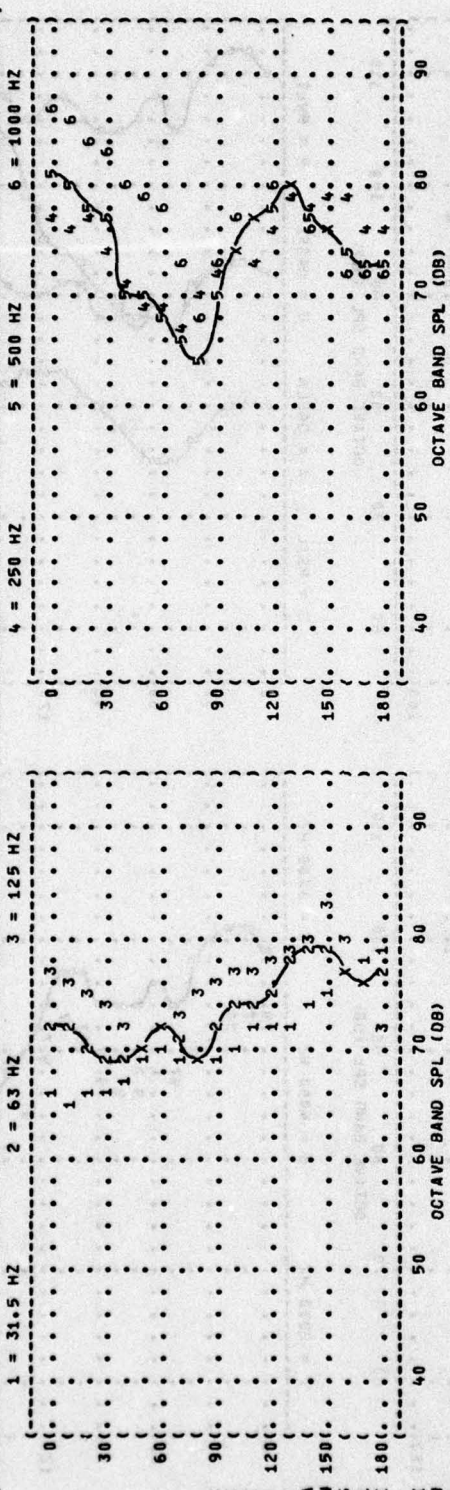




FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

OPERATION:

80% RPM  
1.5 EPR  
BOTH ENGINES  
FREE FLOW

METEOROLOGY:

TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %

IDENTIFICATION:

OMEGA 1.4  
TEST 75-002-049  
RUN 02  
13 MAY 75  
PAGE 6

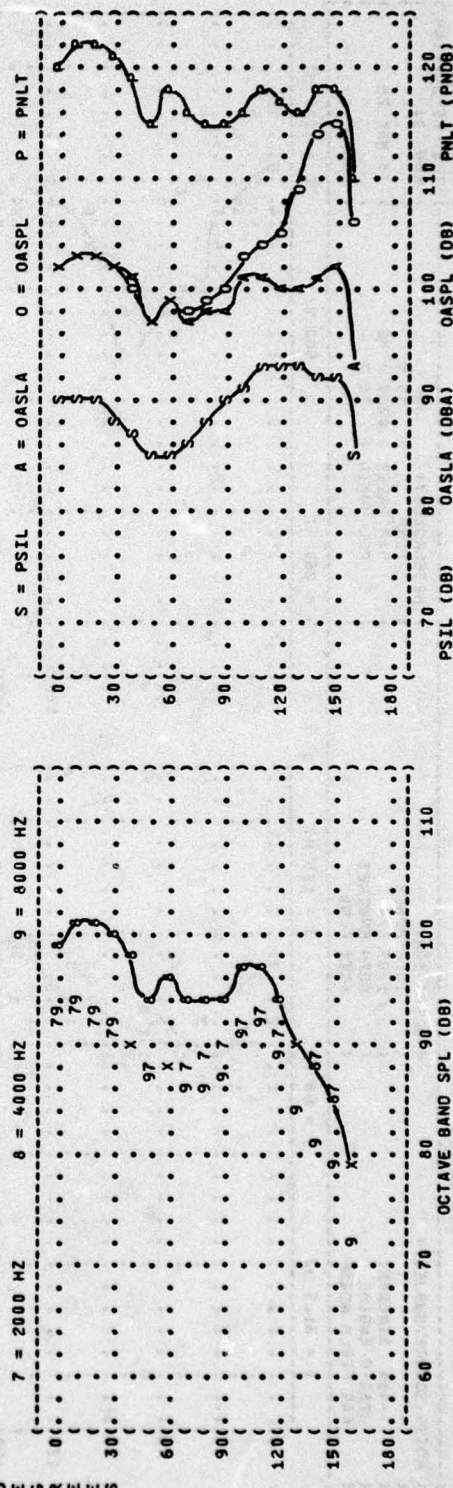
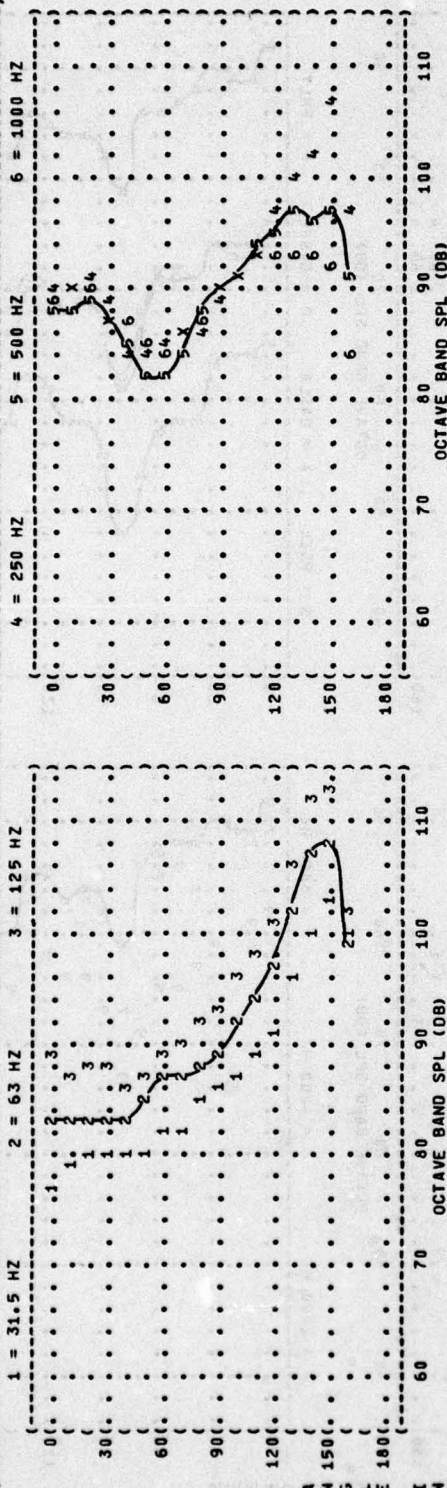


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT: ( OPERATION: )

T-43A AIRCRAFT ( 85% RPM )

JT8D-9 ENGINE ( 1.7 EPR )

FAR FIELD NOISE ( BOTH ENGINES )

( FREE FLOW )

METEOROLOGY: ( )

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

IDENTIFICATION: ( )

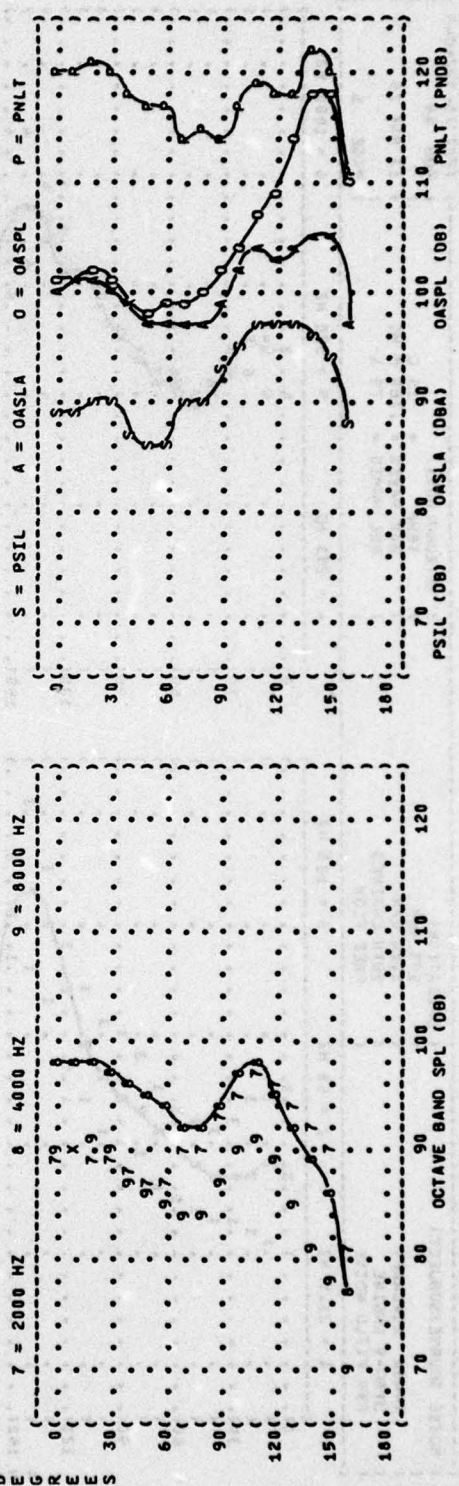
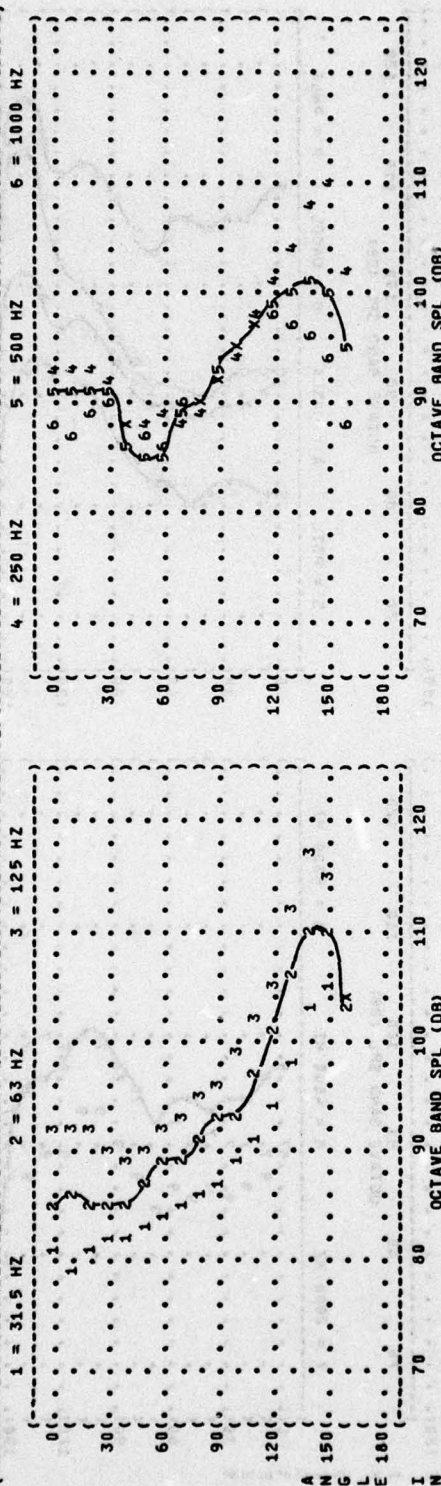
OMEGA 1.4

TEST 75-002-049

RUN 03

13 MAY 75

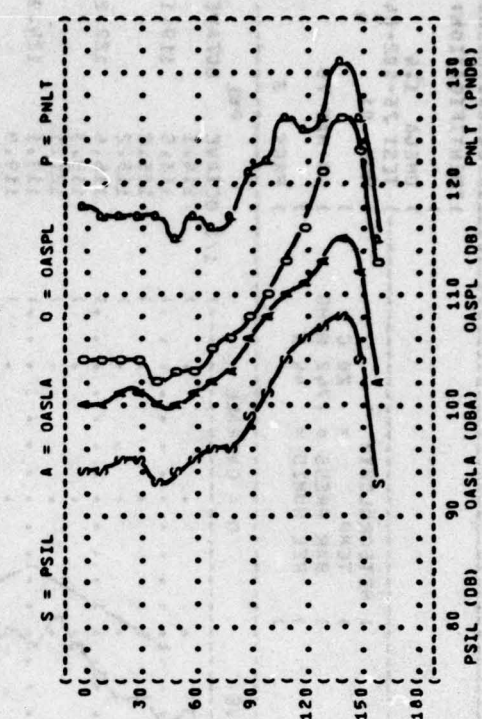
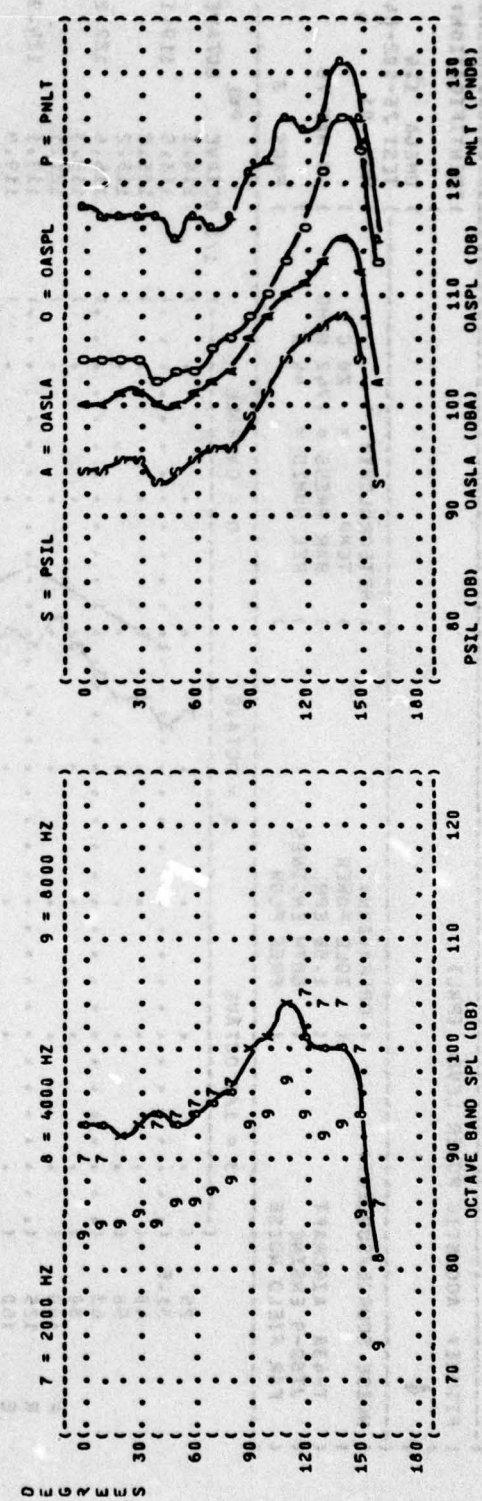
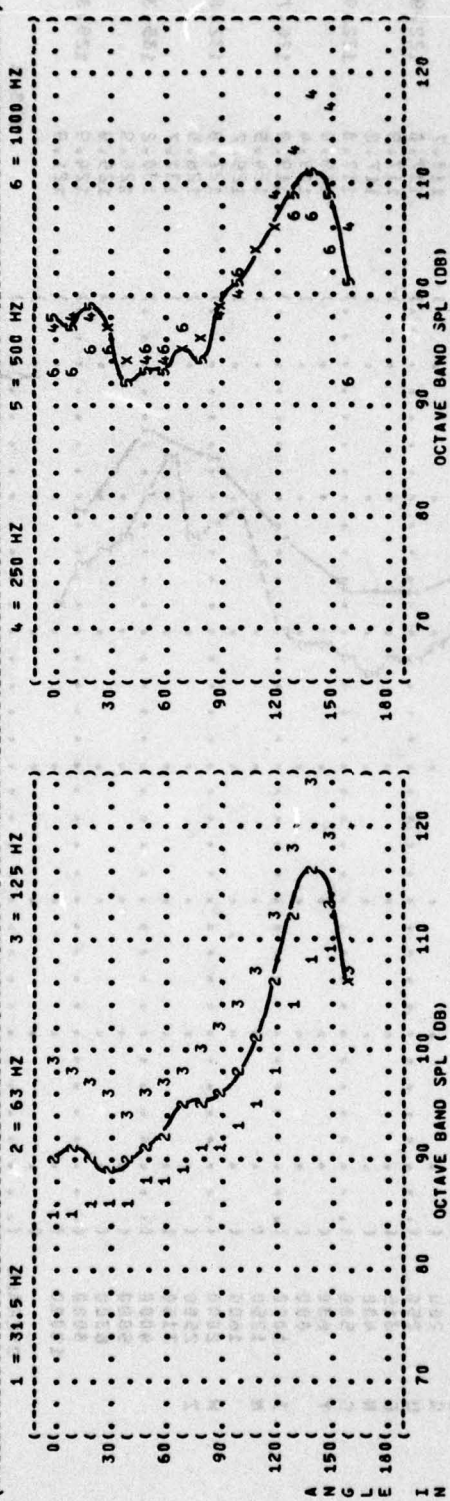
PAGE 6







( ( FIGURE: NORMALIZED FARFIELD NOISE LEVELS  
 ( ( DISTANCE = 100 METERS  
 ( ( 3  
 ( ( NOISE SOURCE/SUBJECT:  
 ( ( T-43A AIRCRAFT  
 ( ( J780-9 ENGINE  
 ( ( FAR FIELD NOISE  
 ( ( OPERATIONS:  
 ( ( MILITARY POWER  
 ( ( 100% RPM, 2.01 EPR  
 ( ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( ( METEOROLOGY:  
 ( ( TEMP = 15 C  
 ( ( BAR PRESS = .760 M HG  
 ( ( REL HUMID = 70 %  
 ( ( IDENTIFICATION:  
 ( ( OMEGA 1.4  
 ( ( TEST 75-002-049  
 ( ( RUN 05  
 ( ( 13 MAY 75  
 ( ( PAGE 6





-----  
FIGURE: ACOUSTIC POWER LEVEL {PWL}

OMEGA 1.4  
TEST 75-002-049

NOISE SOURCE/SUBJECT :  
( OPERATIONS :  
) METEOROLOGY :  
) RUN 01

T-43A AIRCRAFT  
( ) IDLE POWER  
( ) 1.05 EPR  
( ) TEMP = 20 C  
( ) BAR PRESS = .742 M HG  
( ) 13 MAY 78

JT80-9 ENGINE  
 ( BOTH ENGINES )  
 REL HUMID = 44 %

FAR FIELD NOISE ( FREE FLOW ) PAGE 3



FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATIONS:

OMEGA 1.4

TEST 75-002-049

RUN 02

13 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATIONS:

80% RPM

1.5 EPR

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 20 C

BAR PRESS = .742 M HG

REL HUMID = 44 %

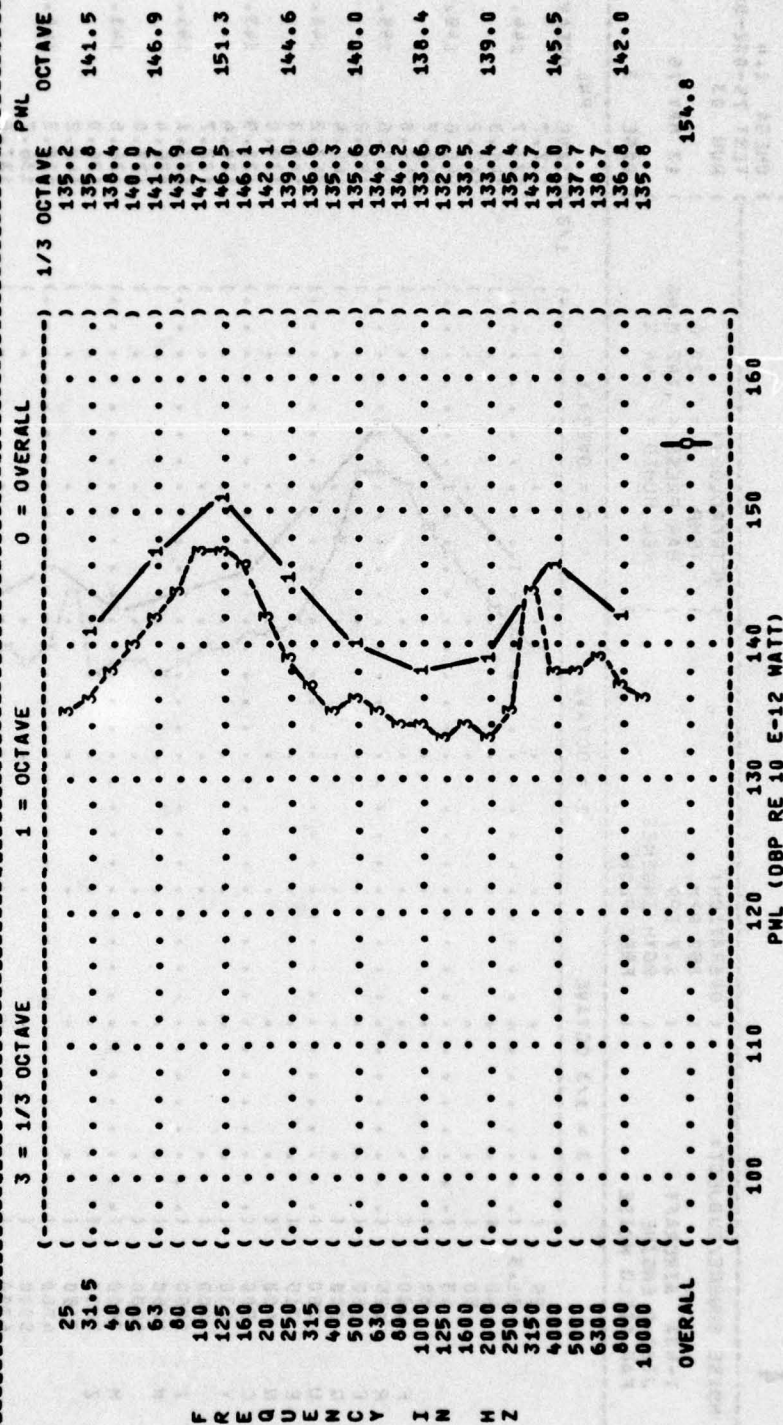






FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-049

RUN 04

13 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

90% RPM

1.84 EPR

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 20 C

BAR PRESS = .742 H HG

REL HUMID = 44 %

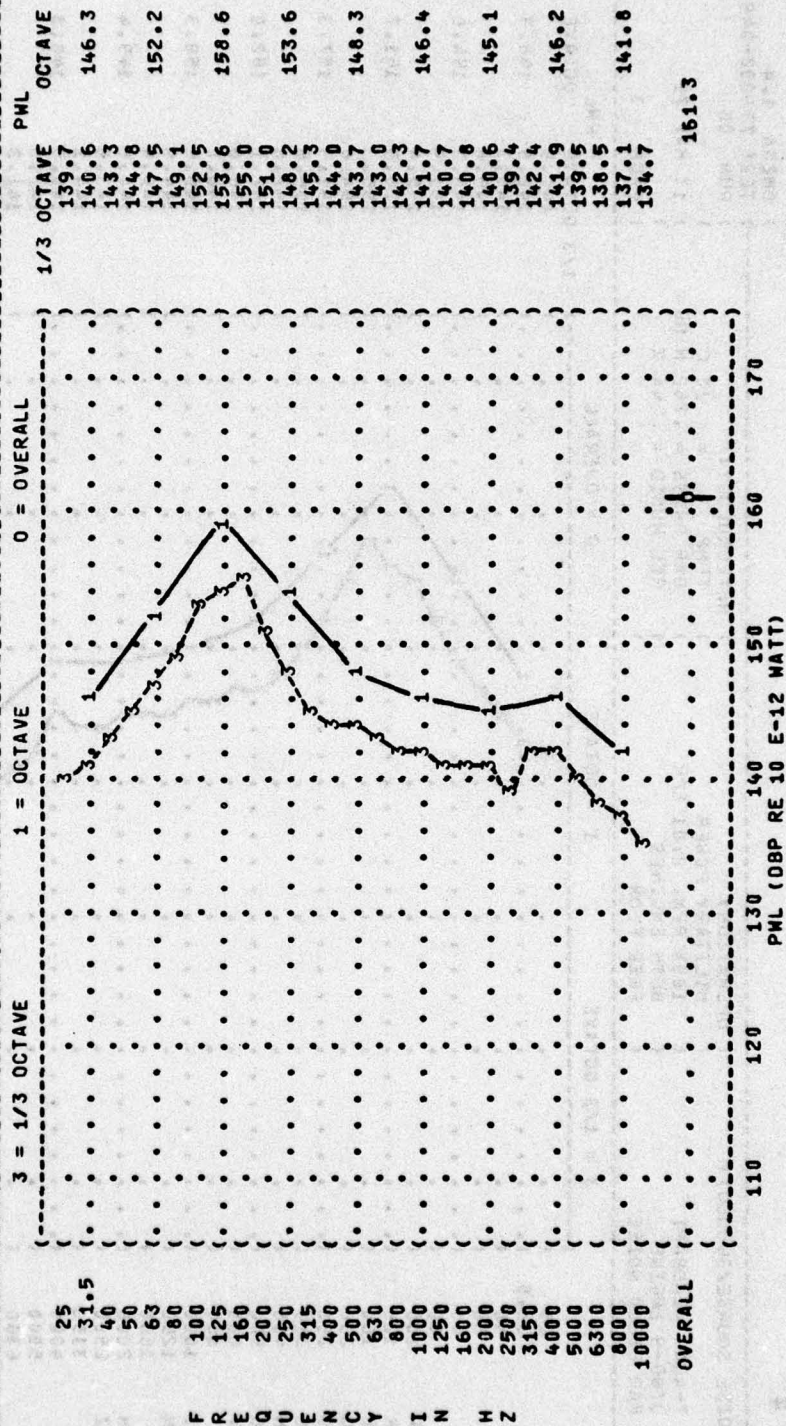




FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION: OMEGA 1.4  
TEST 75-002-049  
RUN 05  
13 MAY 75  
PAGE 3

NOISE SOURCE/SUBJECT: T-43A AIRCRAFT  
JT80-9 ENGINE  
FAR FIELD NOISE

OPERATIONS: MILITARY POWER  
100% RPM, 2.01 EPR  
BOTH ENGINES  
FREE FLOW

METEOROLOGY: TEMPERATURE = 20 C  
BAR PRESS = .742 M HG  
REL HUMID = 44 %

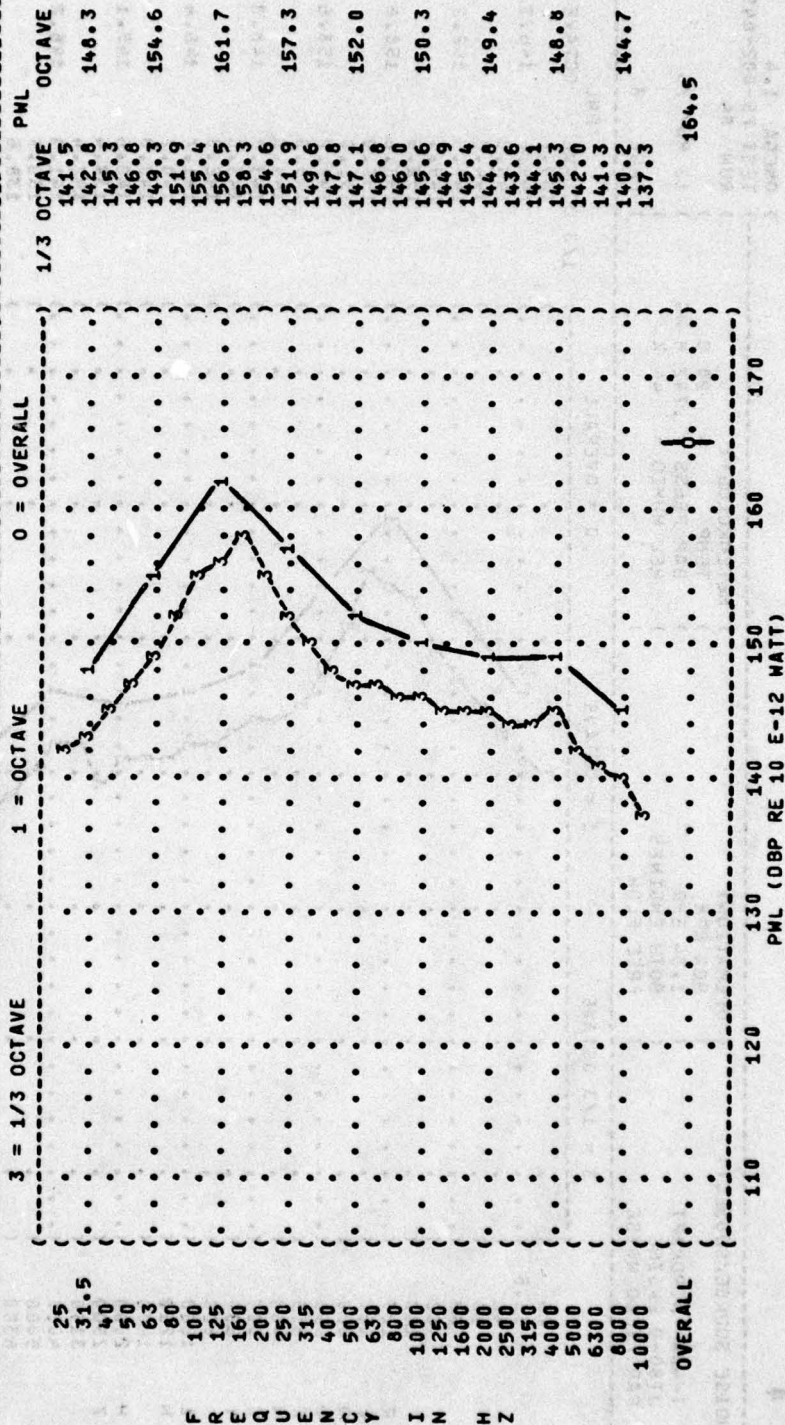


TABLE: DIRECTIVITY INDEX (DB)																	IDENTIFICATION:			
6																	OMEGA 1.4			
NOISE SOURCE/SUBJECT:																	TEST 75-002-049			
( T-43A AIRCRAFT																	RUN 01			
( JT8D-9 ENGINE																	13 MAY 75			
( FAR FIELD NOISE																	PAGE 4			
METEOROLOGY:																				
( TEMP = 20 C																				
( BAR PRESS = .742 M HG																				
( REL HUMID = 44 %																				
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
ANGLE (DEGREES)																				
1/3 OCTAVE																				
25	-6	-7	-6	-5	-4	-3	-2	-3	-3	-0	-1	1	1	-0	3	3	6	6	7	
31.5	-7	-5	-5	-5	-4	-4	-3	-3	-2	-2	-3	-2	-1	2	3	4	6	8	8	
40	-4	-6	-4	-4	-5	-2	-1	-2	-3	-4	-2	1	2	2	2	4	4	5	8	
50	-6	-7	-7	-7	-6	-3	-3	-4	-6	-3	1	2	2	3	2	3	3	4	5	
63	-5	-7	-6	-9	-5	-4	-2	-4	-4	-3	-1	1	2	4	4	5	2	2	4	
80	-1	-1	-2	-4	-5	-5	-2	-4	-6	-2	-1	-2	-0	3	6	5	2	-1	-1	
100	-0	-1	-3	-2	-6	-7	-5	-4	-5	0	-0	-1	2	2	4	6	3	-2	-4	
125	-2	-2	-2	-3	-4	-6	-3	-1	-1	-2	-2	1	1	3	3	6	3	-1	-7	
160	0	-1	-0	-5	-5	-7	-7	-9	-9	-2	1	2	2	4	2	6	3	-1	-4	
200	-0	-1	1	-2	-4	-7	-6	-8	-7	-3	-1	-2	1	5	3	4	4	1	-1	
250	3	3	1	-0	-4	-4	-6	-9	-10	-5	-4	-1	2	3	5	5	4	2	0	
315	1	2	3	2	-5	-6	-8	-10	-12	-4	-1	2	2	3	4	1	1	1	3	
400	5	4	4	2	-5	-6	-8	-10	-12	-4	-2	2	3	6	1	0	-3	-3	-3	
500	6	5	4	3	-4	-4	-5	-8	-11	-4	-1	1	4	6	1	1	-4	-4	-4	
630	5	4	3	1	-2	-4	-6	-9	-11	-4	-1	1	4	6	1	1	-4	-4	-4	
800	5	4	3	1	-2	-4	-6	-9	-11	-4	-1	1	4	6	1	1	-4	-4	-4	
1000	8	7	5	5	2	2	1	-5	-11	-5	-3	-4	3	3	-2	-5	-8	-8	-7	
1250	9	8	6	7	2	2	2	-1	-13	-2	-1	-2	2	2	-2	-4	-10	-7	-7	
1600	4	3	5	7	-1	-2	-1	-5	-13	-3	0	-2	1	1	-2	-3	-9	-8	-7	
2000	2	1	3	2	2	2	2	-3	-10	-3	-1	-2	-0	-2	-3	-4	-10	-7	-7	
2500	8	6	6	4	4	3	2	-5	-9	-4	-1	-6	-4	-3	-8	-8	-14	-11	-10	
3150	7	4	4	3	3	2	2	-4	-6	-1	1	1	2	2	-3	-4	-9	-7	-7	
4000	4	3	3	3	0	2	1	-4	-8	-1	1	1	2	2	-2	-4	-8	-6	-6	
5000	6	4	4	4	1	0	0	-5	-9	-2	0	-1	2	2	-1	-3	-7	-5	-5	
6300	6	5	4	4	1	-0	-1	-5	-9	-3	0	-0	2	4	-1	-3	-7	-5	-5	
8000	6	4	4	3	0	-1	-2	-6	-9	-2	1	1	2	4	0	-2	-7	-5	-5	
10000	6	5	4	3	1	-1	-2	-5	-8	-3	0	0	2	4	-1	-3	-7	-6	-5	
OCTAVE																				
31.5	-6	-6	-5	-5	-4	-3	-2	-2	-3	-2	-2	0	1	1	3	4	5	6	8	
63	-2	-3	-4	-5	-5	-4	-4	-4	-5	-2	-1	-0	1	1	2	3	4	5	8	
125	-0	-1	-2	-3	-5	-7	-5	-4	-4	-1	0	-0	1	2	3	4	5	6	1	
250	2	1	2	-1	-6	-6	-6	-8	-5	-3	-1	-2	1	4	5	6	7	8	1	
500	6	5	3	2	-5	-5	-7	-9	-11	-4	-2	-2	2	3	2	1	-1	-2	-2	
1000	8	7	6	5	1	0	1	-6	-11	-5	-2	-2	2	2	-3	-3	-7	-6	-6	
2000	5	4	5	6	0	2	1	-4	-11	-3	-1	-2	1	1	-2	-3	-8	-5	-5	
4000	7	4	4	5	3	3	1	0	-7	-3	-1	-2	-1	-5	-6	-11	-9	-8	-6	
8000	6	5	4	3	1	-1	-1	-5	-9	-3	0	-0	2	4	-1	-3	-7	-6	-6	
OVERALL																				
6	4	4	4	4	1	1	0	-2	-7	-3	-1	-1	1	1	-1	-1	-3	-4	-4	



TABLE: DIRECTIVITY INDEX (DB)														
6														
NOISE SOURCE/SUBJECT:														
T-43A AIRCRAFT														
JT8D-9 ENGINE														
FAR FIELD NOISE														
FREQ (HZ)														
ANGLE (DEGREES)														
1/3 OCTAVE														
25														
31.5														
40														
50														
63														
80														
100														
125														
160														
200														
250														
315														
400														
500														
630														
800														
1000														
1250														
1600														
2000														
2500														
3150														
4000														
5000														
6300														
8000														
10000														
OCTAVE														
31.5														
63														
125														
250														
500														
1000														
2000														
4000														
8000														
OVERALL														

TABLE: DIRECTIVITY INDEX (DB)																	IDENTIFICATION:		
6																	OMEGA 1.4		
NOISE SOURCE/SUBJECT:																	TEST 75-002-049		
OPERATION:																	RUN 03		
T-43A AIRCRAFT																	13 MAY 75		
JT8D-9 ENGINE																	PAGE 4		
FAR FIELD NOISE																			
METEOROLOGY:																			
TEMP = 20 C																			
BAR PRESS = .742 H MG																			
REL HUMID = 44 %																			
ANGLE (DEGREES)																			
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1/3 OCTAVE																			
25	-16	-17	-16	-14	-14	-14	-12	-12	-10	-10	-9	-6	-3	2	8	8	7		
31.5	-15	-18	-15	-14	-15	-13	-13	-13	-11	-10	-7	-5	-3	2	7	9	0		
40	-16	-17	-16	-15	-14	-14	-12	-11	-10	-9	-7	-5	-3	2	7	9	7		
50	-19	-18	-18	-18	-17	-16	-14	-11	-10	-8	-8	-8	-3	2	8	9	3		
63	-16	-17	-16	-17	-16	-15	-12	-12	-10	-8	-8	-5	-1	4	9	8	2		
80	-17	-15	-18	-17	-18	-15	-12	-13	-12	-10	-9	-5	-1	5	8	8	-1		
100	-17	-17	-19	-18	-19	-17	-15	-14	-12	-11	-8	-4	-2	5	9	7	-3		
125	-17	-17	-18	-19	-18	-18	-16	-15	-13	-12	-10	-6	-3	5	9	7	-5		
160	-14	-15	-14	-17	-18	-17	-16	-16	-13	-11	-9	-5	-3	3	9	8	-2		
200	-9	-10	-10	-11	-14	-14	-13	-14	-12	-10	-7	-5	-1	2	7	10	1		
250	-9	-9	-8	-13	-12	-12	-12	-13	-12	-8	-6	-2	1	4	6	9	1		
315	-6	-5	-4	-6	-11	-12	-11	-11	-10	-7	-5	-1	3	5	5	7	1		
400	-3	-4	-4	-4	-10	-12	-11	-7	-7	-4	-2	1	3	5	6	6	0		
500	-5	-5	-5	-5	-10	-11	-10	-7	-5	-3	0	2	4	4	5	4	-1		
630	-6	-5	-4	-4	-9	-10	-9	-5	-4	-2	0	2	4	4	4	3	-2		
800	-6	-7	-5	-5	-8	-8	-8	-5	-4	-1	1	3	4	4	4	1	-5		
1000	-5	-6	-4	-3	-6	-7	-8	-3	-3	-1	1	3	4	4	2	-1	-6		
1250	-6	-7	-4	-3	-5	-6	-6	-3	-3	-1	1	3	4	3	1	-1	-9		
1600	-4	-4	-3	-3	-4	-4	-5	-2	-3	-0	2	4	4	3	1	-1	-10		
2000	-5	-3	-5	-5	-6	-6	-7	-4	-2	0	3	4	4	2	-0	-3	-11		
2500	-2	-0	-2	-4	-4	-5	-5	-3	-2	1	3	4	4	1	-1	-5	-13		
3150	4	5	5	4	3	1	1	-3	-2	1	4	5	2	-4	-6	-10	-19		
4000	-2	-1	-1	-2	-3	-4	-4	-3	-2	1	4	5	1	-1	-4	-8	-16		
5000	-3	-2	-2	-4	-5	-6	-5	-3	-3	1	4	6	3	-2	-6	-8	-17		
6300	4	3	5	4	0	-1	-2	-3	-3	-1	1	4	1	-3	-7	-10	-19		
8000	-1	-1	-0	-2	-4	-5	-5	-4	-3	-1	1	5	3	-1	-6	-9	-16		
10000	1	1	2	0	-0	-3	-2	-4	-4	-1	4	4	2	-3	-7	-8	-15		
OCTAVE																			
31.5	-16	-17	-16	-15	-15	-13	-12	-12	-10	-9	-8	-5	-3	2	7	9	0		
63	-17	-16	-17	-17	-17	-15	-13	-13	-11	-9	-9	-5	-2	4	8	8	1		
125	-15	-16	-16	-18	-19	-18	-16	-15	-13	-11	-9	-5	-2	4	9	7	-3		
250	-8	-8	-9	-13	-13	-12	-12	-13	-12	-9	-6	-3	0	3	7	9	1		
500	-4	-5	-4	-5	-9	-11	-10	-6	-5	-3	-1	2	3	5	5	4	-1		
1000	-6	-7	-5	-4	-6	-7	-7	-4	-3	-1	1	3	4	4	3	-0	-6		
2000	-3	-2	-3	-4	-5	-5	-5	-3	-2	0	1	4	3	2	-0	-3	-11		
4000	3	3	4	3	1	-0	-0	-3	-2	-1	2	3	0	-3	-6	-9	-18		
8000	3	2	4	3	-0	-2	-2	-3	-3	-1	2	4	2	-2	-7	-10	-17		
OVERALL																			
	-9	-9	-8	-9	-11	-12	-11	-11	-10	-8	-6	-3	-1	4	8	8	0		



TABLE: DIRECTIVITY INDEX (DB)										IDENTIFICATION:									
6										) OMEGA 1.4									
										) TEST 75-002-049									
NOISE SOURCE/SUBJECT:										) RUN 04									
( OPERATION:										) METEOROLOGY:									
( 902 RPM										) TEMP = 20 C									
( 1.84 EPR										) BAR PRESS = .742 M HG									
( BOTH ENGINES										) 13 MAY 75									
( FREE FLOW										) REL HUMID = 44 %									
FREQ										) PAGE 4									
( HZ)																			
										ANGLE (DEGREES)									
1/3 OCTAVE																			
25																			
31.5																			
40																			
50																			
63																			
80																			
100																			
125																			
160																			
200																			
250																			
315																			
400																			
500																			
630																			
800																			
1000																			
1250																			
1600																			
2000																			
2500																			
3150																			
4000																			
5000																			
6300																			
8000																			
10000																			
OCTAVE																			
31.5																			
63																			
125																			
250																			
500																			
1000																			
2000																			
4000																			
8000																			
OVERALL																			

TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
6																
NOISE SOURCE/SUBJECT:																
T-43A AIRCRAFT																
JT80-9 ENGINE																
FAR FIELD NOISE																
FREQUENCY (HZ)																
ANGLE (DEGREES)																
1/3 OCTAVE																
25																
31.5																
40																
50																
63																
80																
100																
125																
160																
200																
250																
315																
400																
500																
630																
800																
1000																
1250																
1600																
2000																
2500																
3150																
4000																
5000																
6300																
8000																
10000																
OCTAVE																
31.5																
63																
125																
250																
500																
1000																
2000																
4000																
8000																
OVERALL																





### EQUAL LEVEL CONTOURS (DB)

ATBCRAFT

ATBCRAFT

LU NOISE (FREE FLOW

2300 DDEC

REL HUMID = 70 %

) OMEGA 1.4

) OMEGA 1.4

NON

13 MAY 75



DISTANCE FROM SOURCE (METERS)



### EQUAL LEVEL CONTOURS (DB)

5

( OPERATION:

1.7 EPR

## BOTH ENGINES

**FREE FLOW**

## METEOROLOGY:

TEMP = 15 C

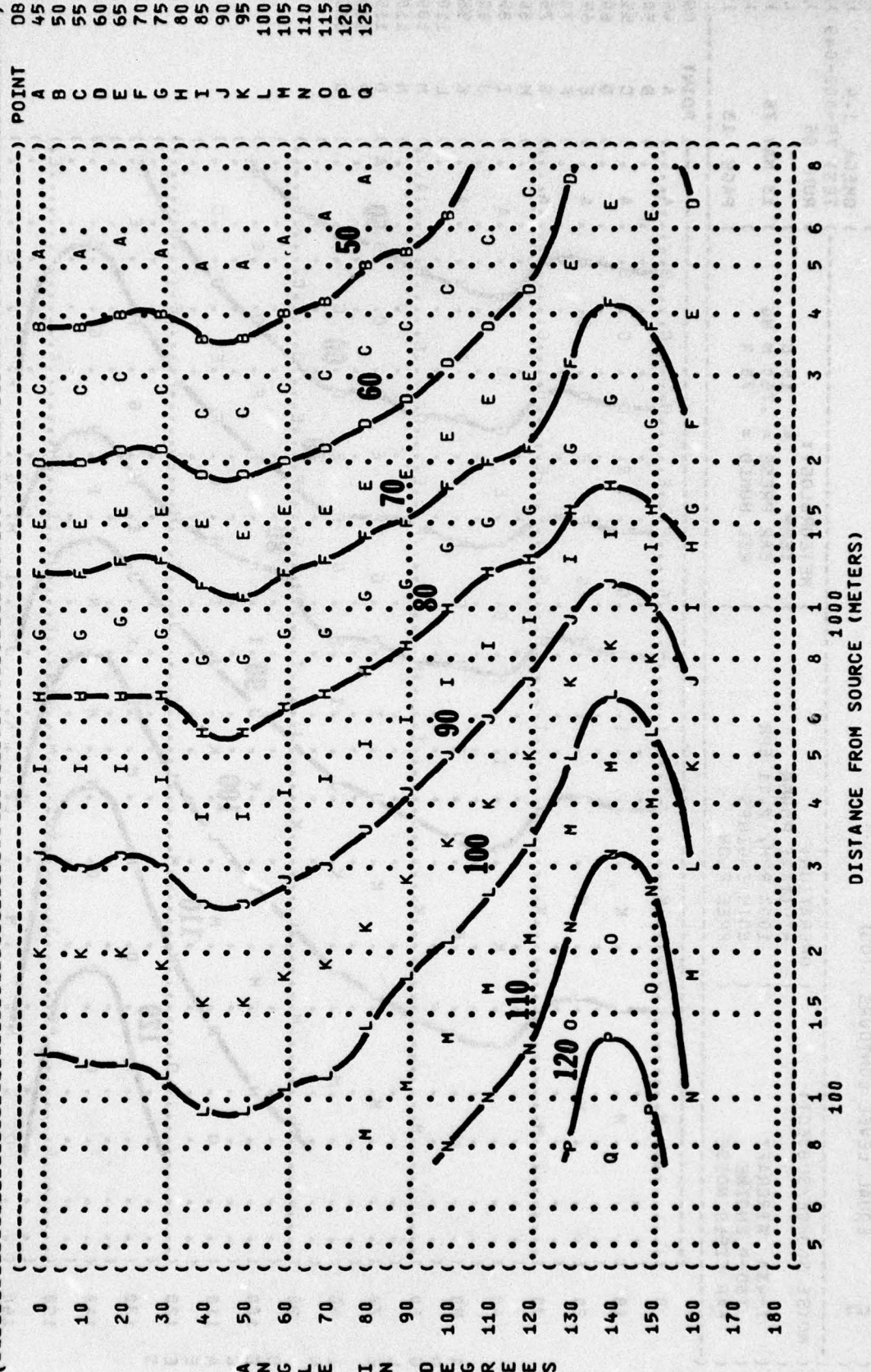
BAR PRESS = .760 M HG

REL HUMID = 70 %

[illegible]

1000

( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL)  
 ( 5  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( ) IDENTIFICATION:  
 ( )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-049  
 ( ) RUN 04  
 ( )  
 ( NOISE SOURCE/SUBJECT: ) METEOROLOGY:  
 ( )  
 ( ) TEMP = 15 C  
 ( T-43A AIRCRAFT )  
 ( ) 90% RPM  
 ( ) BAR PRESS = .760 M HG  
 ( JT8D-9 ENGINE )  
 ( ) 1.84 EPR  
 ( ) REL HUMID = 70 %  
 ( FAR FIELD NOISE )  
 ( ) BOTH ENGINES  
 ( ) FREE FLOW  
 ( )  
 ( ) PAGE 13





40





9

NOISE SOURCE/SUBJECT:

**( OPERATION:**

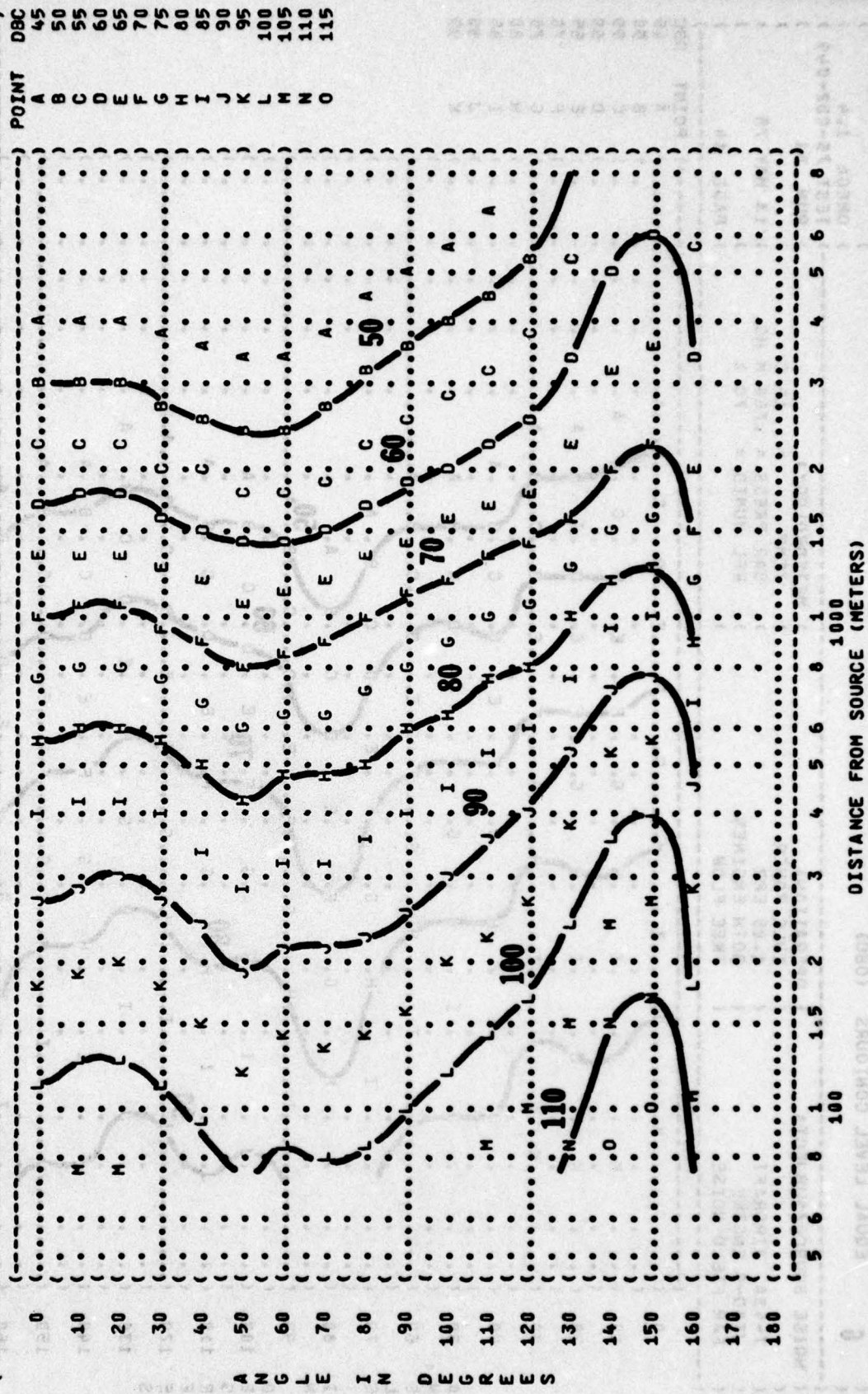
) METEOROLOGY

T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

1.5 EPR  
BOTH EN  
FREE FL

TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %

IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-049  
RUN 02  
13 MAY 75  
PAGE 14



6

FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)  
EQUAL LEVEL CONTOURS (DBC)

6

( NOISE SOURCE/SUBJECT:	( OPERATION:	( METEOROLOGY:
( T-43A AIRCRAFT	( 85% RPM	( TEMP = 15 C
( JT8D-9 ENGINE	( 1.7 EPR	( BAR PRESS = .760 H HG
( FAR FIELD NOISE	( BOTH ENGINES	( REL HUMID = 70 %
	( FREE FLOW	

IDENTIFICATION: )  
)  
) OMEGA 1.4  
) TEST 75-002-049  
) RUN 03  
)  
)  
) 13 MAY 75  
)  
)  
) PAGE 14

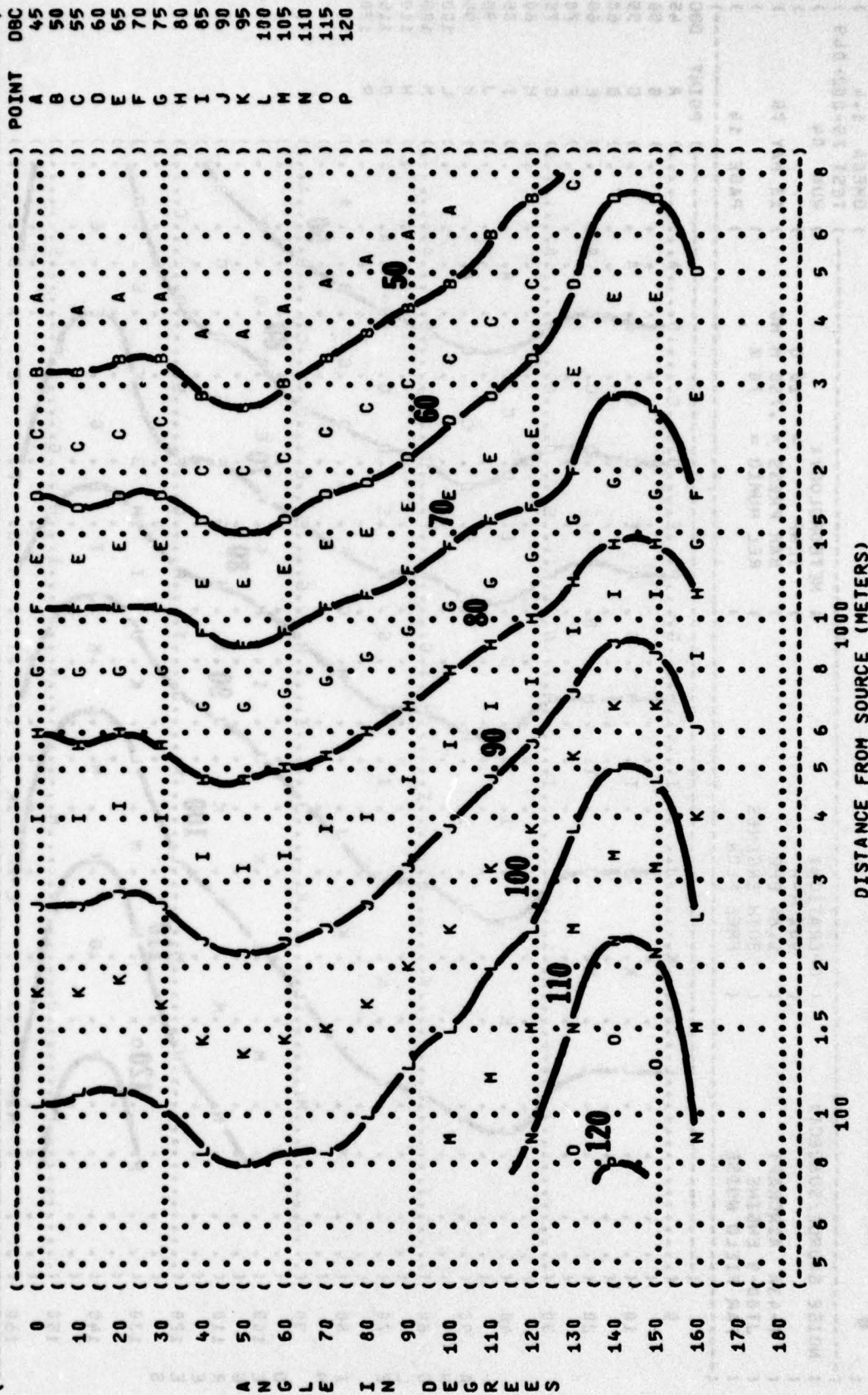




FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)  
EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION: OMEGA 1.4  
TEST 75-002-049  
RUN 04  
METEOROLOGY:  
TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %  
OPERATION:  
90% RPM  
1.84 EPR  
BOTH ENGINES  
FREE FLOW

NOISE SOURCE/SUBJECT:  
T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

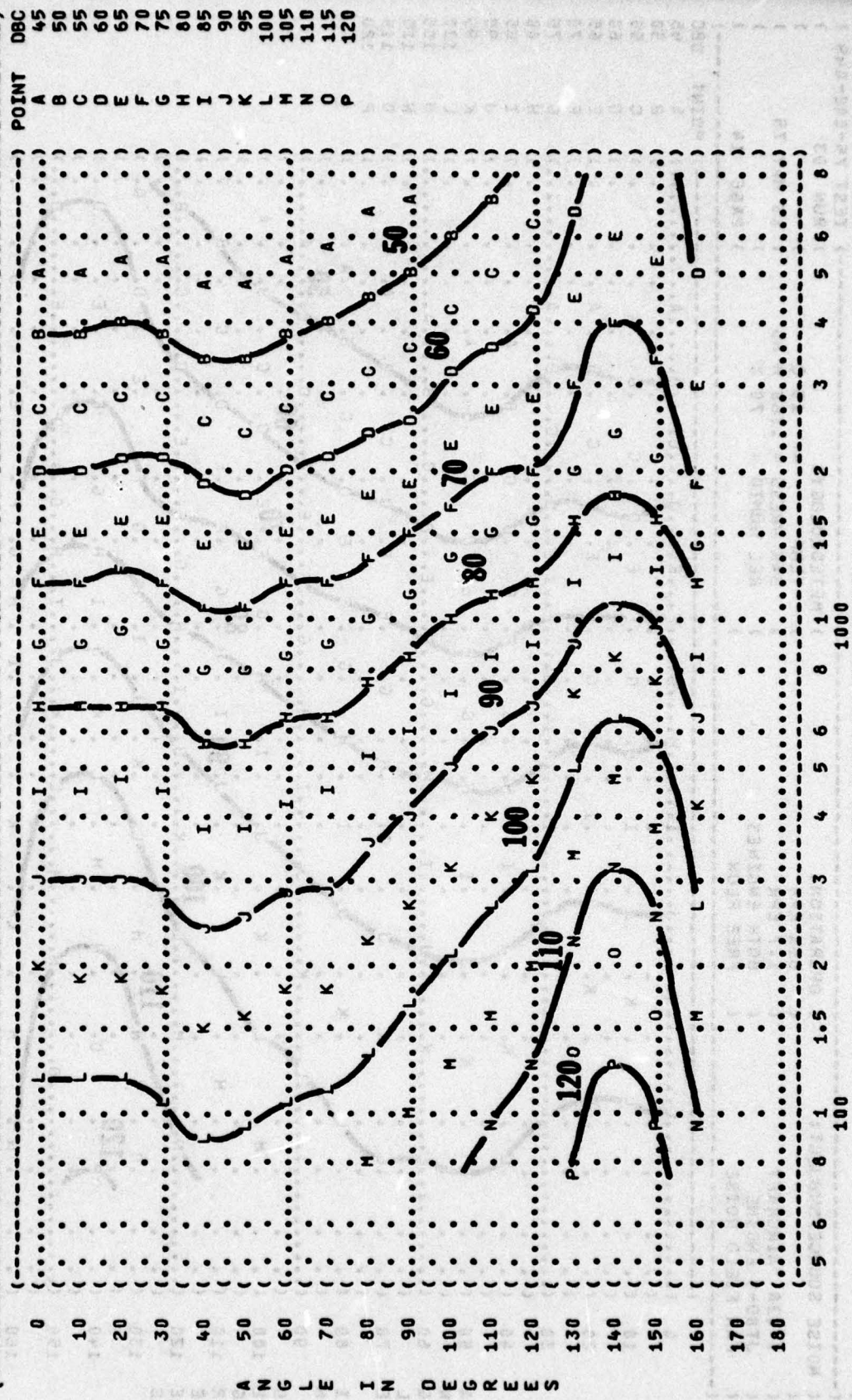






FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)  
 EQUAL LEVEL CONTOURS (DBA)

7

IDENTIFICATION: OMEGA 1.4  
 TEST 75-002-049  
 RUN 01  
 METEOROLOGY: TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 OPERATION: IDLE POWER  
 1.05 EPR  
 BOTH ENGINES  
 FREE FLOW  
 NOISE SOURCE/SUBJECT: T-43A AIRCRAFT  
 JT8D-9 ENGINE  
 FAR FIELD NOISE  
 PAGE 15

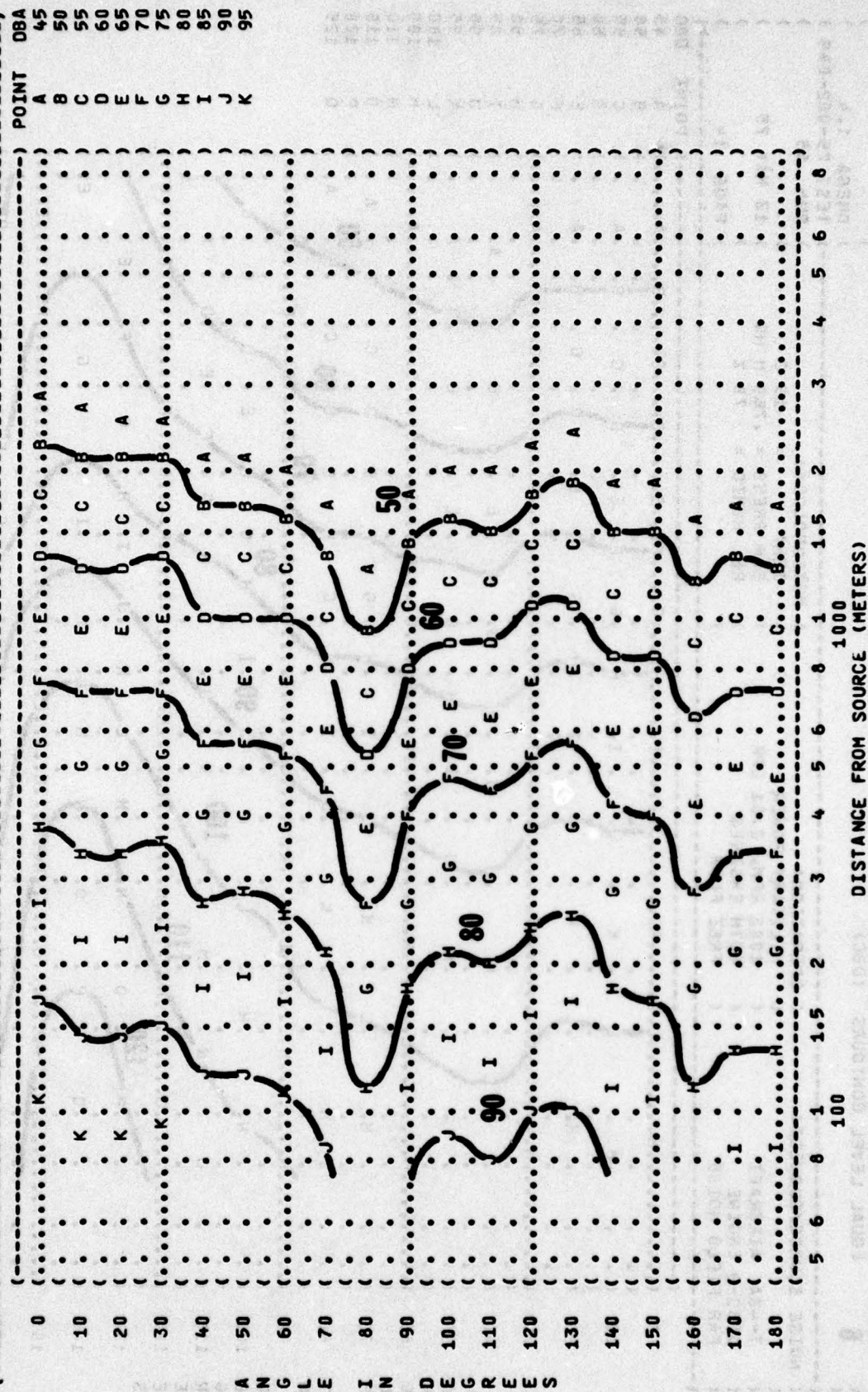


FIGURE 8: A-WEIGHTED OVERALL SOUND LEVEL {OASLA} EQUAL LEVEL CONTOURS (DBA)

1

FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)  
EQUAL LEVEL CONTOURS (DBA)

7

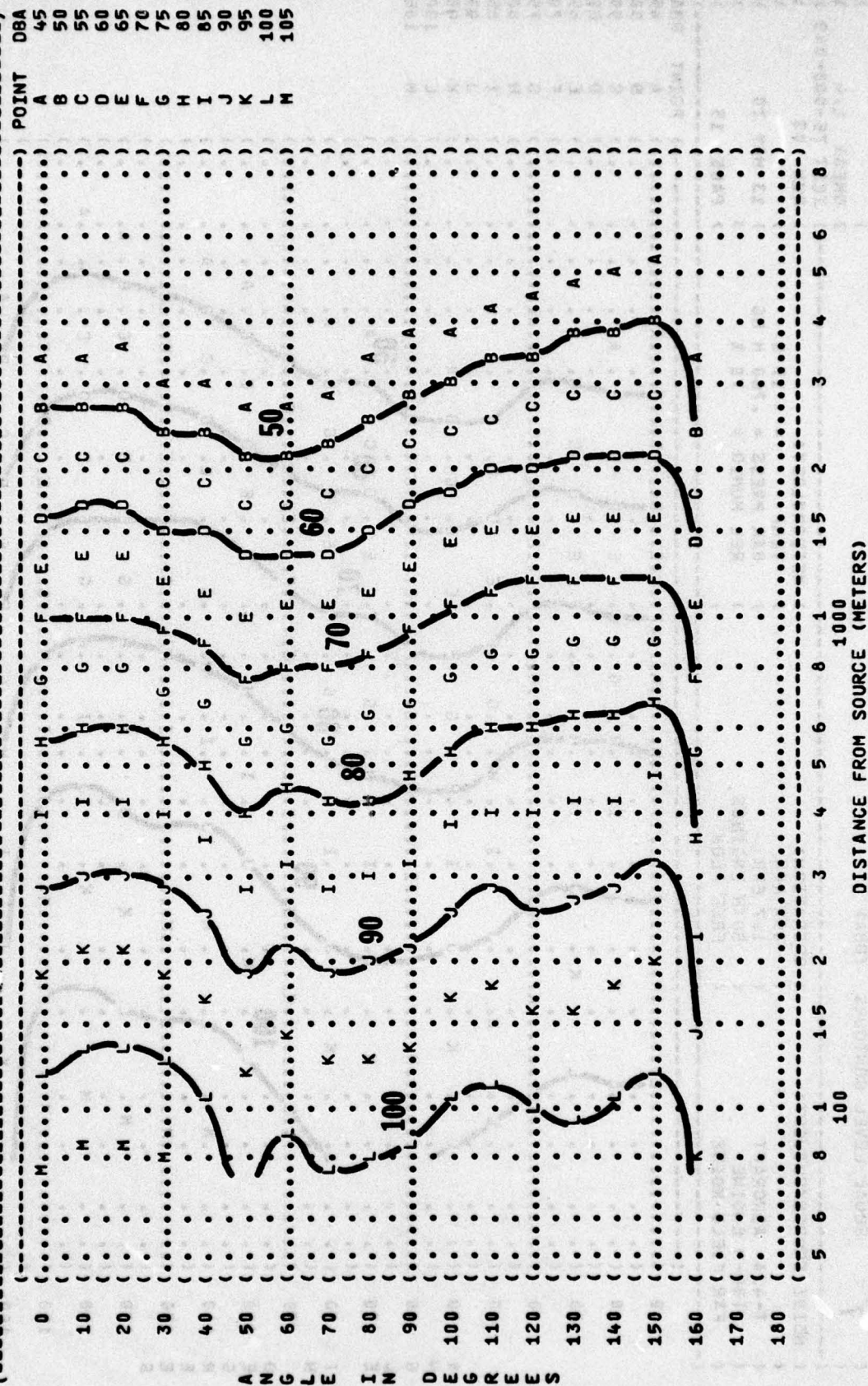
NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) IDENTIFICATION: )

T-43A AIRCRAFT ( 80% RPM ) TEMP = 15 C ) OMEGA 1.4

JT8D-9 ENGINE ( 1.5 EPR ) BAR PRESS = .760 M HG ) TEST 75-002-044

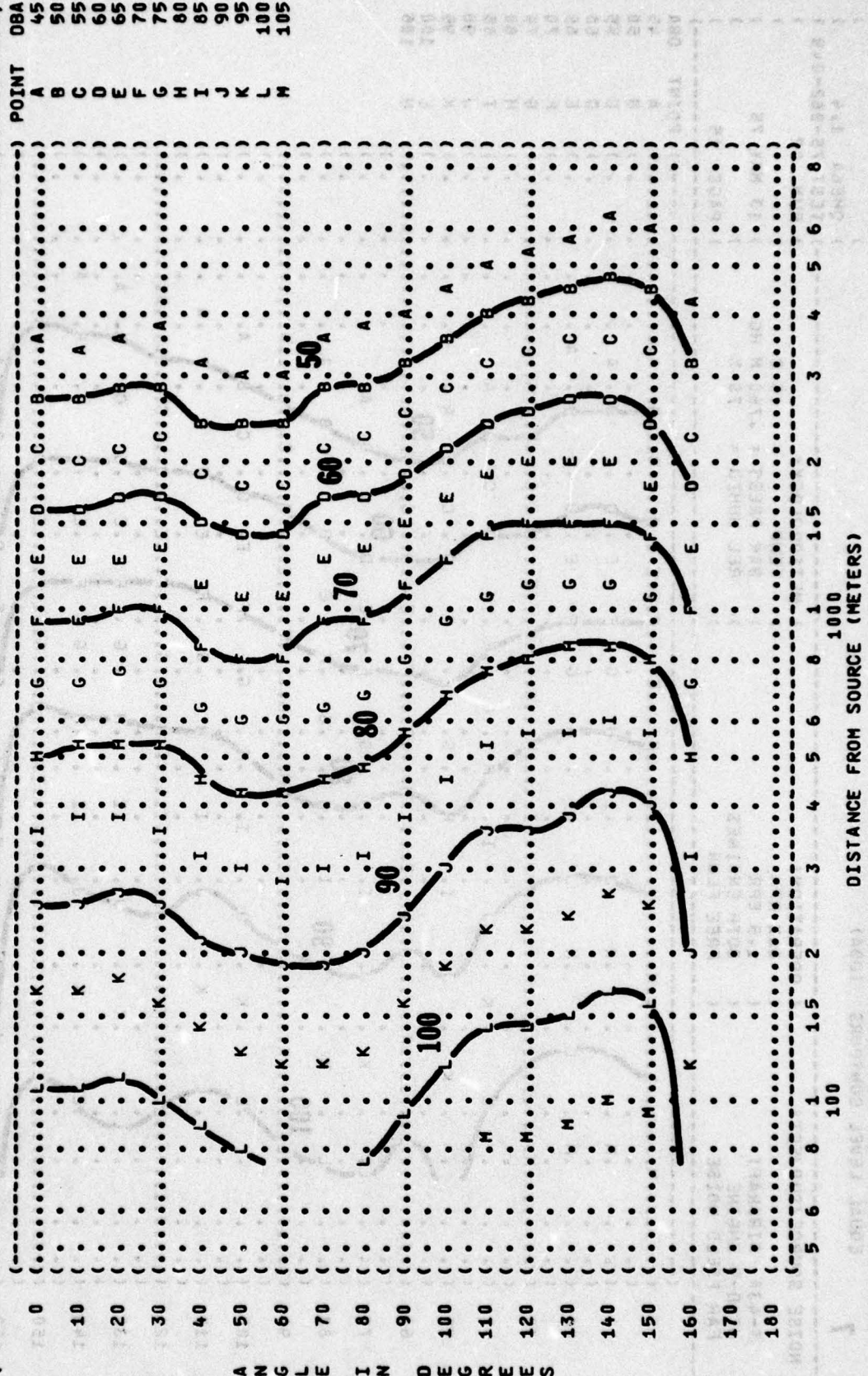
FAR FIELD NOISE ( BOTH ENGINES ) REL HUMID = 70 % ) RUN 02

( FREE FLOW ) ) PAGE 15





( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)  
 ( 7  
 ( EQUAL LEVEL CONTOURS (DBA)  
 ( ) IDENTIFICATION:  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-049  
 ( ) RUN 03  
 ( NOISE SOURCE/SUBJECT: ) METEOROLOGY:  
 ( ) OPERATION: )  
 ( ) 85% RPM ) TEMP = 15 C  
 ( ) 1.7 EPR ) BAR PRESS = .760 M HG  
 ( ) BOTH ENGINES ) REL HUMID = 70 %  
 ( ) FREE FLOW )  
 ( ) PAGE 15



A N G L E I N D E G R E E S

### EQUAL LEVEL CONTOURS (DBA)

1

**( OPERATION:**

**1.84 EPR  
BOTH ENGINES  
FREE FLOW**

## TEOROLOGY:

TEMP = 15 C

13 MAY 75

23

PAGE 15

POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110

AZUL HZ DEGRADADO

49

1000  
DISTANCE FROM SOURCE (METERS)



1

**JT8D-9 ENGINE**

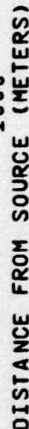
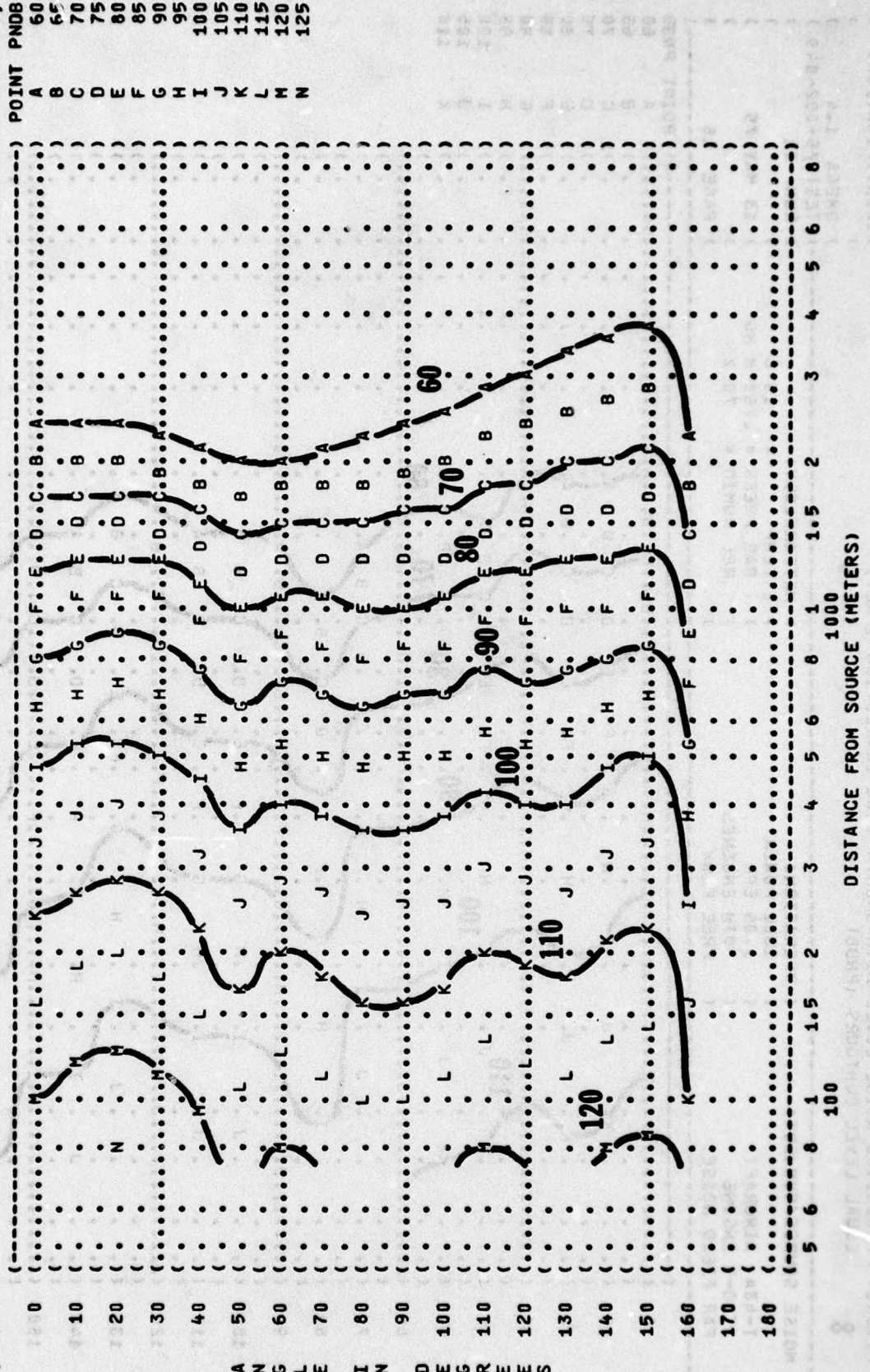


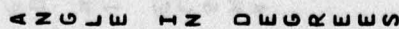


FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT}  
 8  
 IDENTIFICATION:  
 OMEGA 1.4  
 TEST 75-002-049  
 RUN 02  
 METEOROLOGY:  
 TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 OPERATION:  
 80% RPM  
 1.5 EPR  
 BOTH ENGINES  
 FREE FLOW  
 NOISE SOURCE/SUBJECT:  
 T-43A AIRCRAFT  
 JT8D-9 ENGINE  
 FAR FIELD NOISE  
 PAGE 16



NOISE SOURCE/SUBJECT:

T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE







POINT	PNOB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120
N	125
O	130

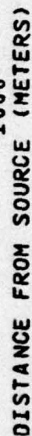
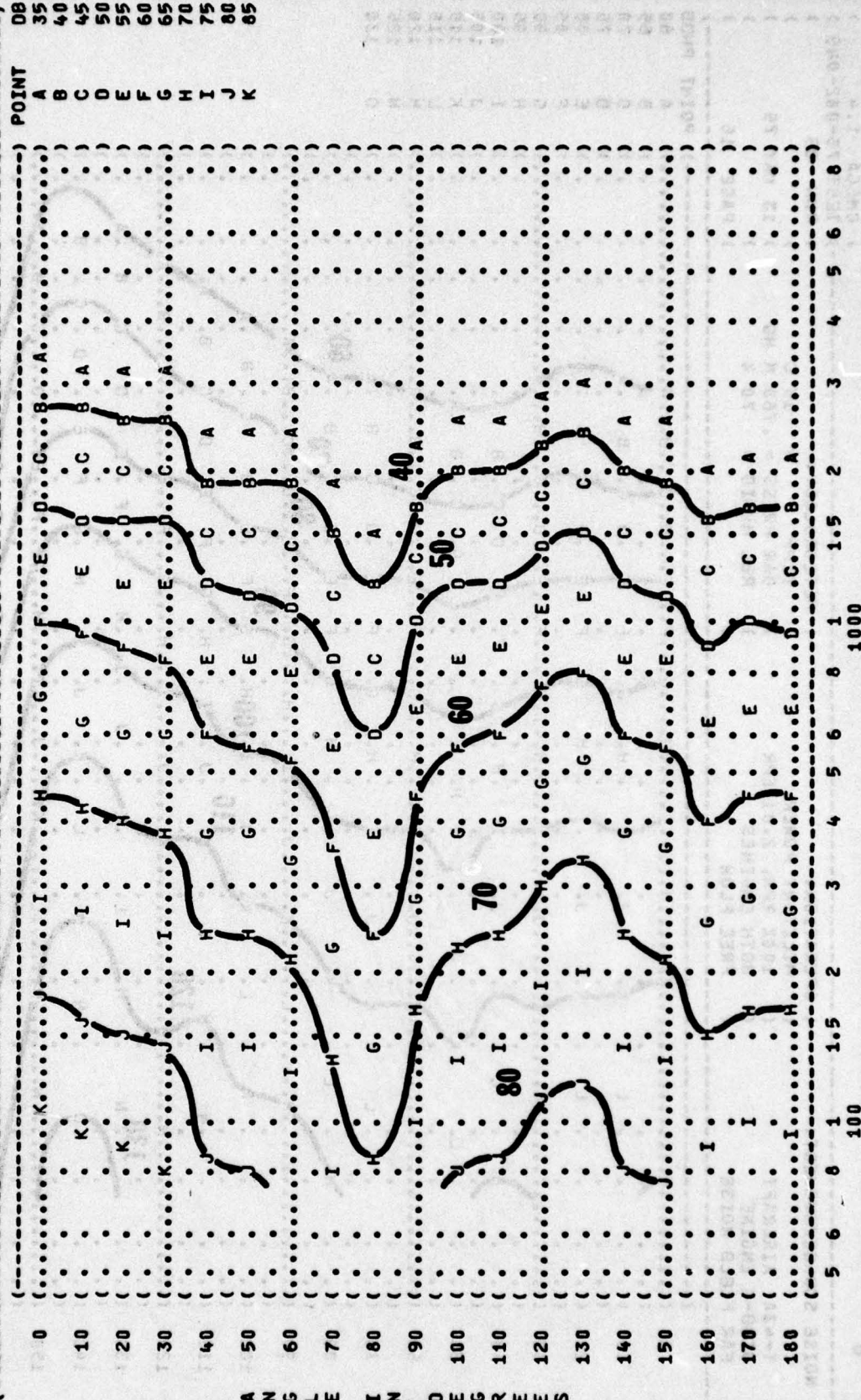


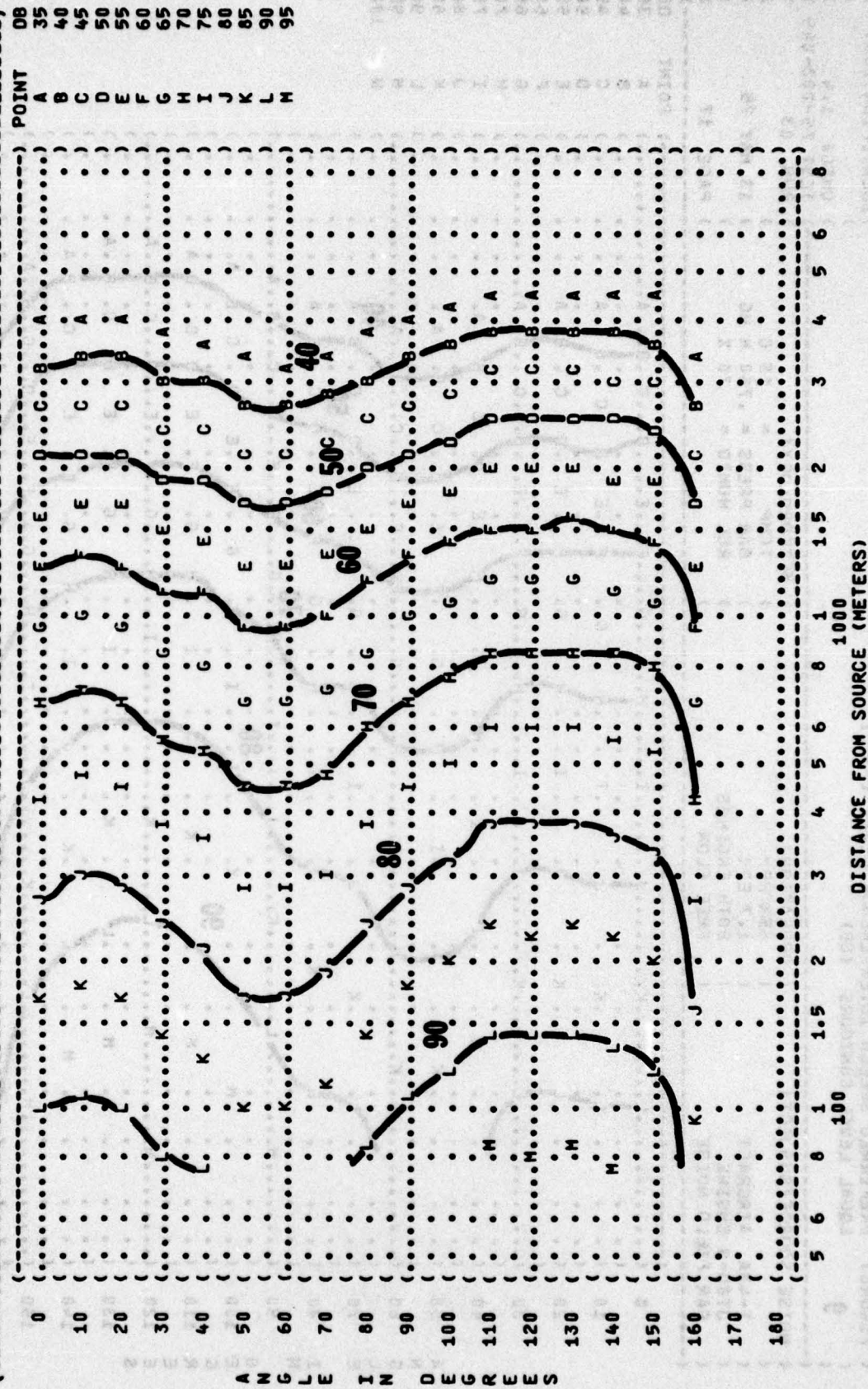


FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)  
 9  
 IDENTIFICATION:  
 OMEGA 1.4  
 TEST 75-002-049  
 RUN 01  
 METEOROLOGY:  
 TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 13 MAY 75  
 PAGE 17



DISTANCE FROM SOURCE (METERS)

( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) )  
 ( 9 )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( J780-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 80% RPM )  
 ( 1.5 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 02 )  
 ( 13 MAY 75 )  
 ( PAGE 17 )





( ) FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)  
 ( ) 9  
 ( ) IDENTIFICATION:  
 ( )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-049  
 ( ) RUN 03  
 ( ) NOISE SOURCE/SUBJECT: ( ) OPERATION:  
 ( ) T-43A AIRCRAFT ( ) 85% RPM  
 ( ) JT8D-9 ENGINE ( ) 1.7 EPR  
 ( ) FAR FIELD NOISE ( ) BOTH ENGINES  
 ( ) FREE FLOW  
 ( ) METEOROLOGY:  
 ( ) TEMP = 15 C  
 ( ) BAR PRESS = .760 M HG  
 ( ) REL HUMID = 70 %  
 ( ) PAGE 17

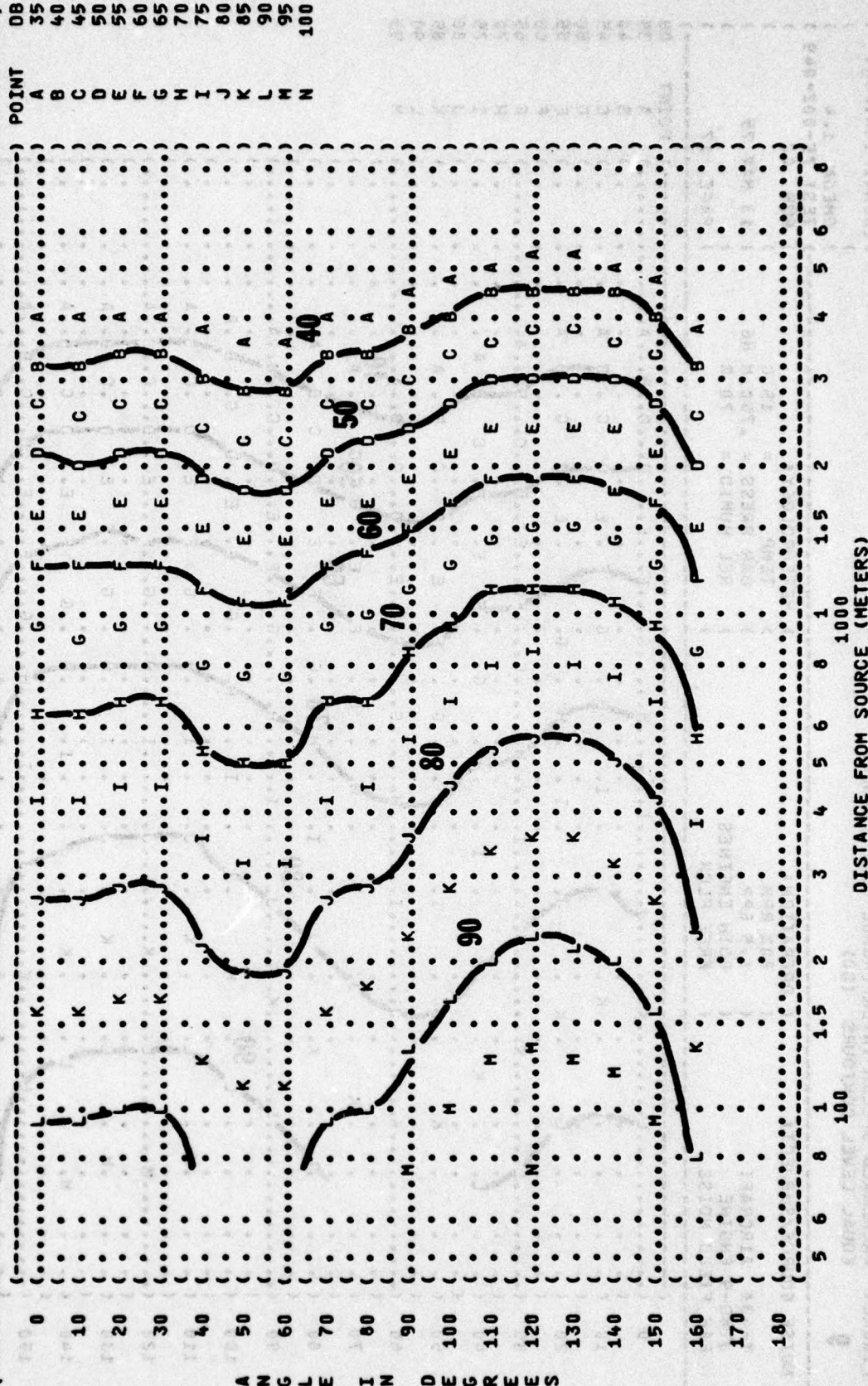
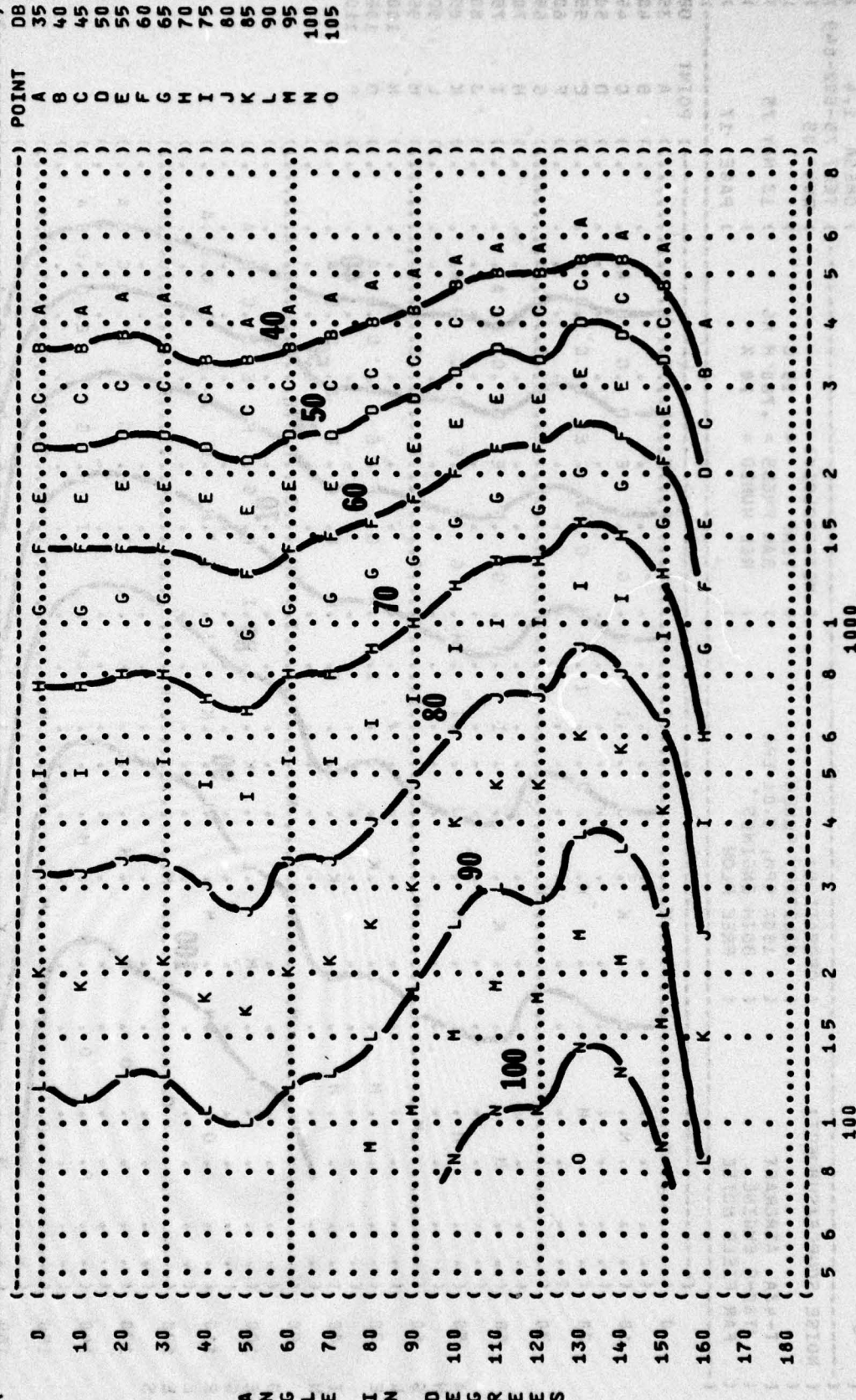


FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)  
 9  
 IDENTIFICATION: OMEGA 1.4  
 TEST 75-002-049  
 RUN 04  
 METEOROLOGY: TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 OPERATION: 90% RPM  
 1.84 EPR  
 BOTH ENGINES  
 FREE FLOW  
 NOISE SOURCE/SUBJECT: T-43A AIRCRAFT  
 JT80-9 ENGINE  
 FAR FIELD NOISE  
 PAGE 17

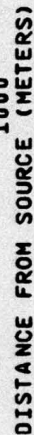




IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-049

	(	MILITARY POWER	)	TEMP	=	15 C
T-43A AIRCRAFT	(	100% RPM, 2.01 EPR	)	BAR PRESS	=	.760 M HG
JT8D-9 ENGINE	(	BOTH ENGINES	)	REL HUMID	=	70 %
FAR FIELD NOISE	(	FREE FLOW	)			

PAGE 17



420 JE HZ DEUGWWS











( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( 10 ) EQUAL TIME CONTOURS (MINUTES) )  
 ( MINIMUM QPL EAR MUFFS )  
 ( )  
 ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )  
 ( ) ( 80% RPM ) ( ) TEMP = 15 C )  
 ( T-43A AIRCRAFT ) ( 1.5 EPR ) ( ) BAR PRESS = .760 M HG )  
 ( JT8D-9 ENGINE ) ( BOTH ENGINES ) ( ) REL HUMID = 70 % )  
 ( FAR FIELD NOISE ) ( FREE FLOW ) ( ) PAGE 8 )

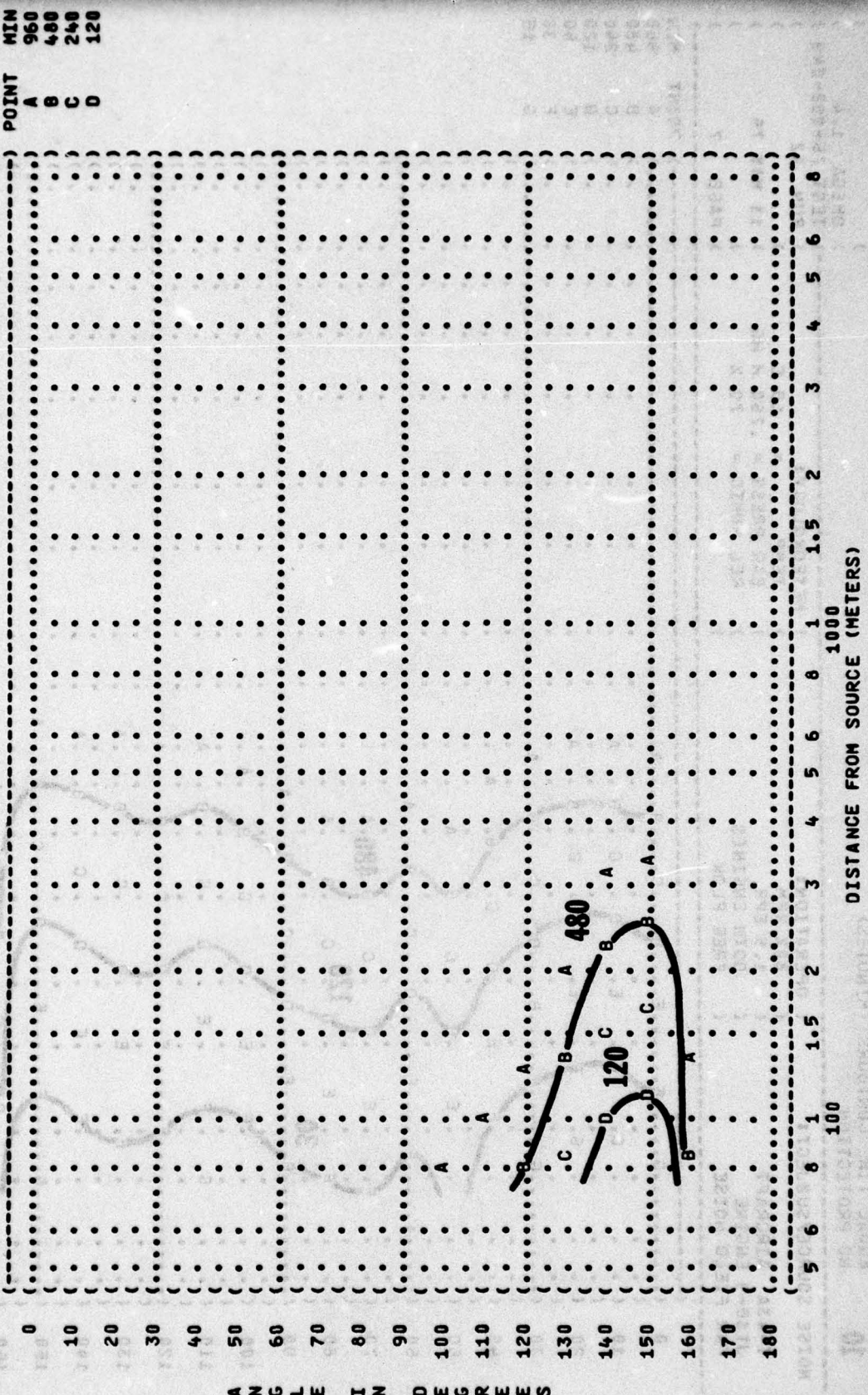


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10

EQUAL TIME CONTOURS (MINUTES)

AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:

OPERATION:

80% RPM

1.5 EPR

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

OMEGA 1.4

TEST 75-002-049

RUN 02

13 MAY 75

PAGE 9

POINT MIN

A 960

B 480

C 240

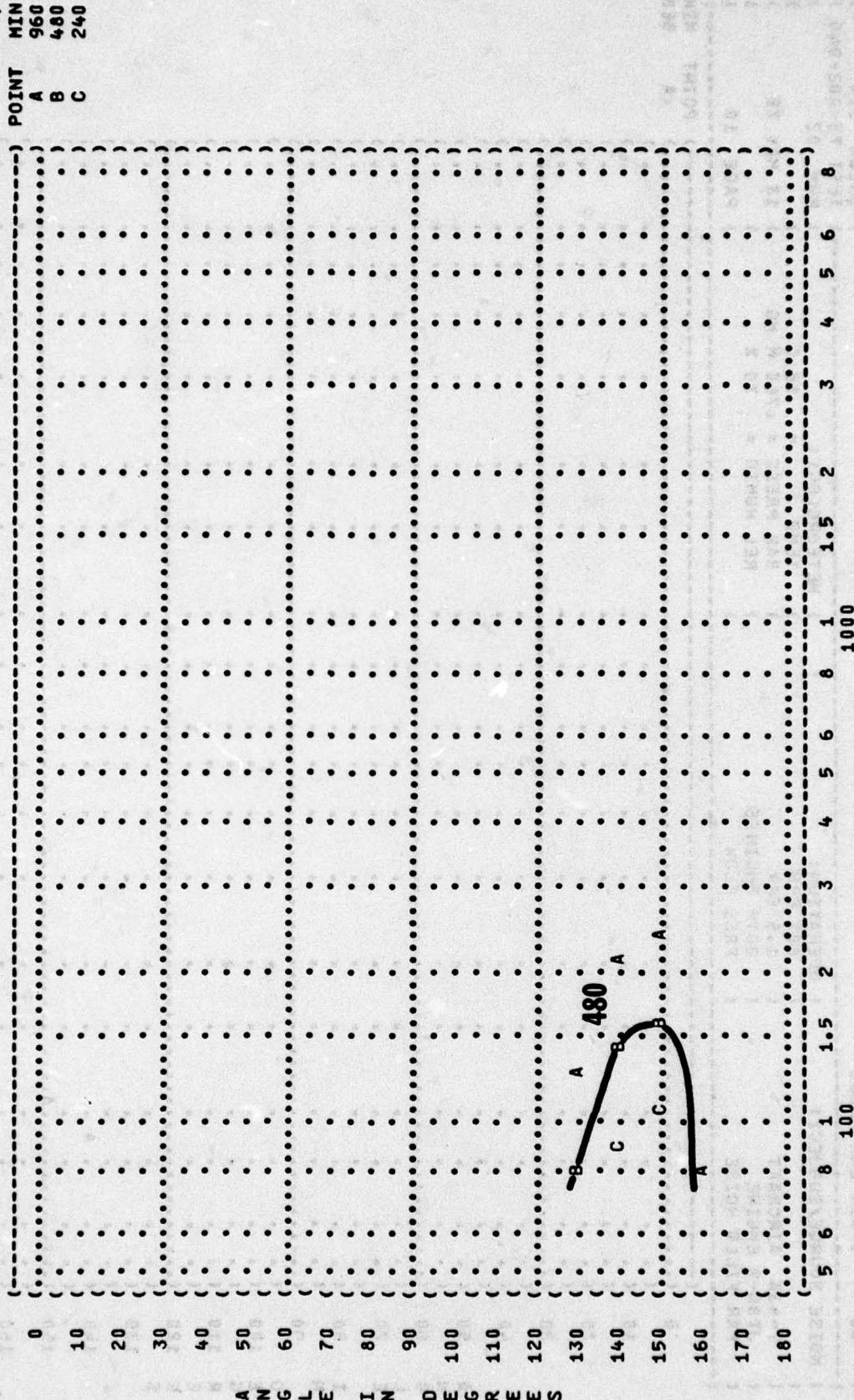










FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10 EQUAL TIME CONTOURS (MINUTES)

H-133 GROUND COMMUNICATION UNIT

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:

T-43A AIRCRAFT 80% RPM TEMP = 15 C

JT8D-9 ENGINE 1.5 EPR BAR PRESS = .760 M HG

FAR FIELD NOISE BOTH ENGINES REL HUMID = 70 %

FREE FLOW

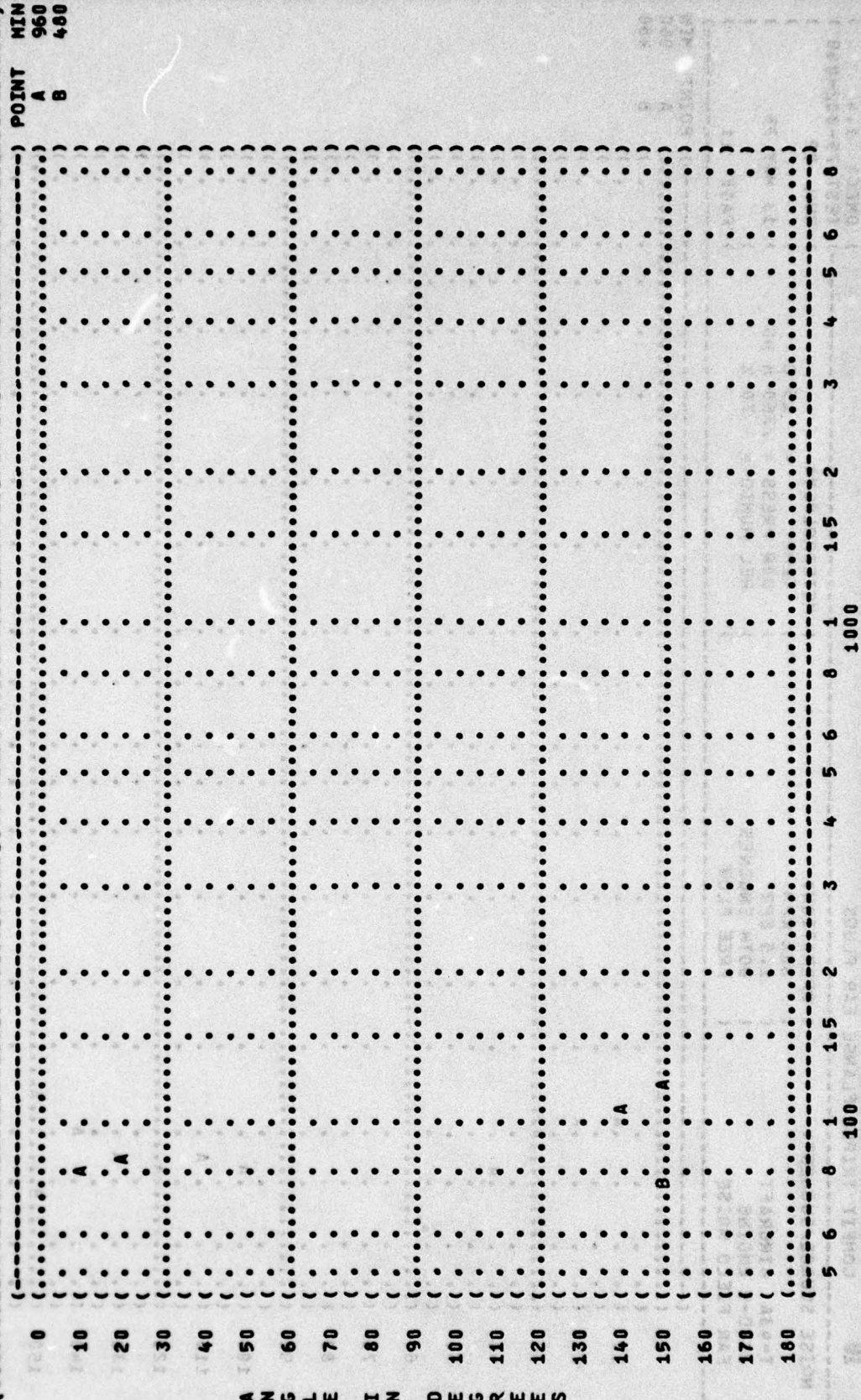
OMEGA 1.4

TEST 75-002-049

RUN 02

13 MAY 75

PAGE 12



ANGLE IN DEGREES

(	FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	(	IDENTIFICATION:
(	10	(	
(	EQUAL TIME CONTOURS (MINUTES)	(	
(	NO PROTECTION	(	OMEGA 1.4
(		(	TEST 75-002-049
(	NOISE SOURCE/SUBJECT:	(	RUN 03
(		(	
(	OPERATION:	(	METEOROLOGY:
(	85% RPM	(	TEMP = 15 C
(	1.7 EPR	(	BAR PRESS = .760 M HG
(	80TH ENGINES	(	REL HUMID = 70 %
(	FREE FLOW	(	
(		(	PAGE 7
(	T-43A AIRCRAFT	(	
(	JT80-9 ENGINE	(	
(	FAR FIELD NOISE	(	

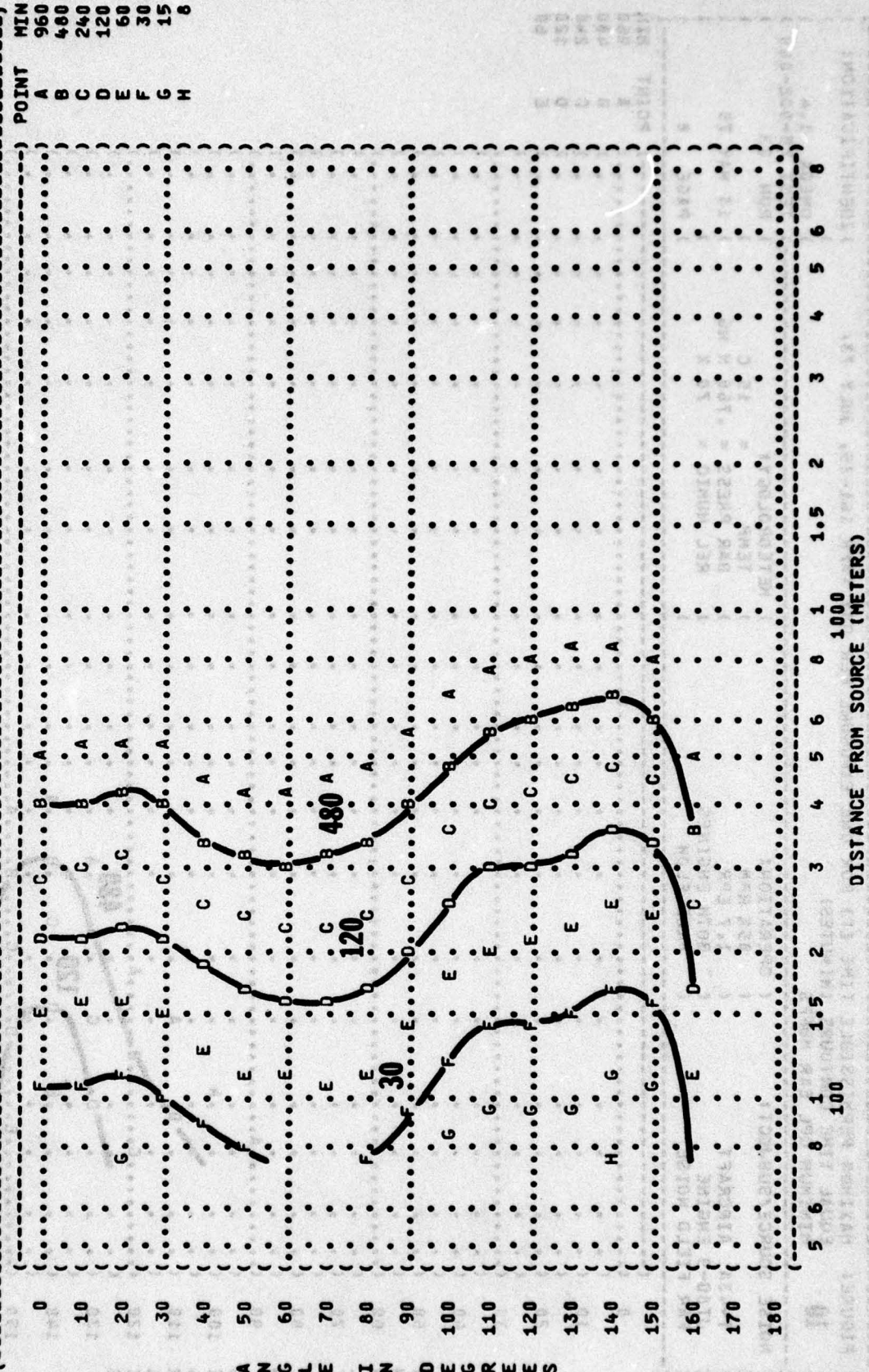


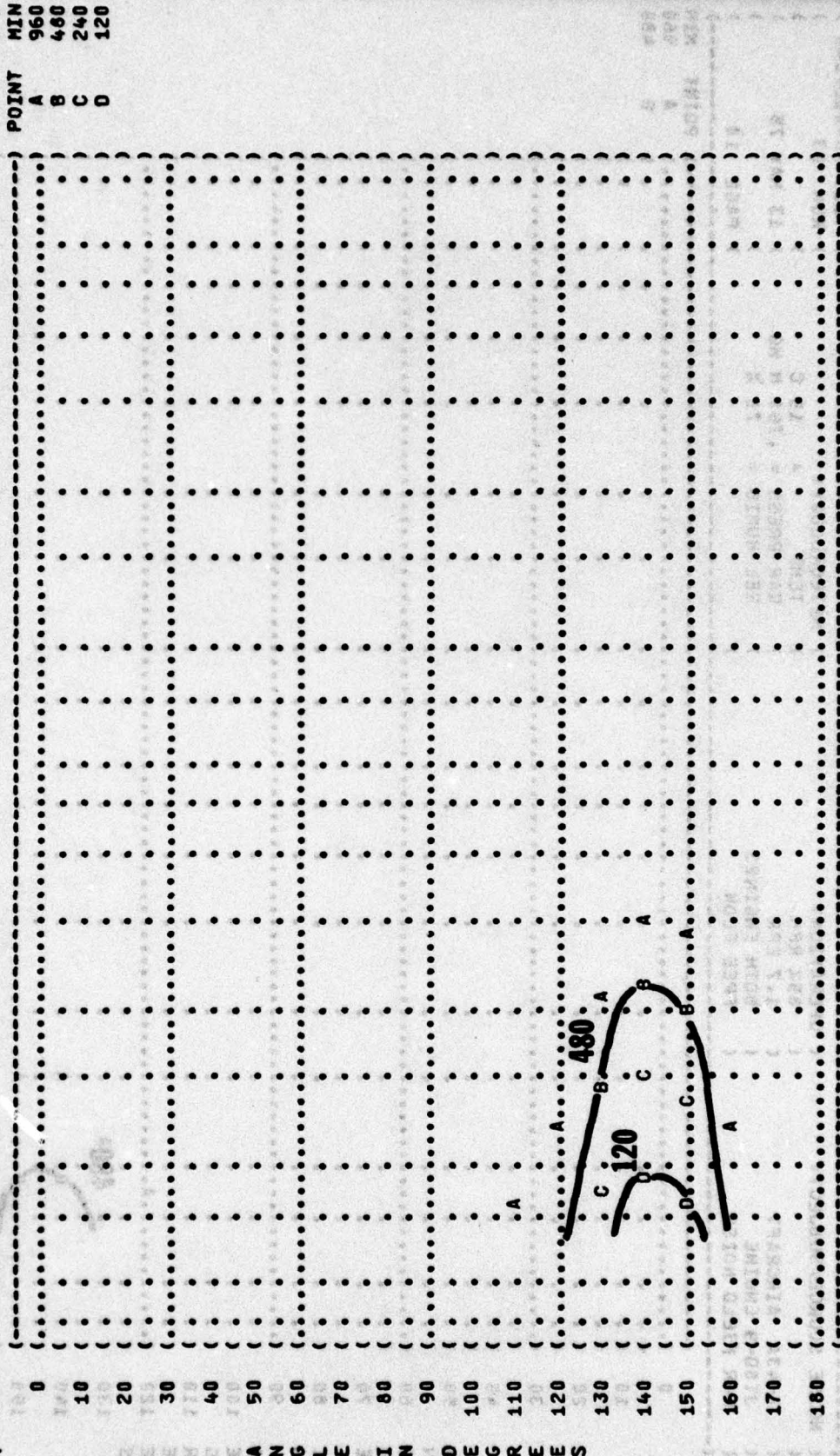




FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

10  
EQUIL TIME CONTOURS (MINUTES)  
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) IDENTIFICATION: )  
 ( ( 85% RPM ) ) OMEGA 1.4  
 ( ( 1.7 EPR ) ) TEST 75-002-049  
 ( ( BOTH ENGINES ) ) RUN 03  
 ( ( FREE FLOW ) ) 13 MAY 75  
 ( ( ) ) REL HUMID = 70 %  
 ( ( ) ) PAGE 9



DISTANCE FROM SOURCE (METERS)



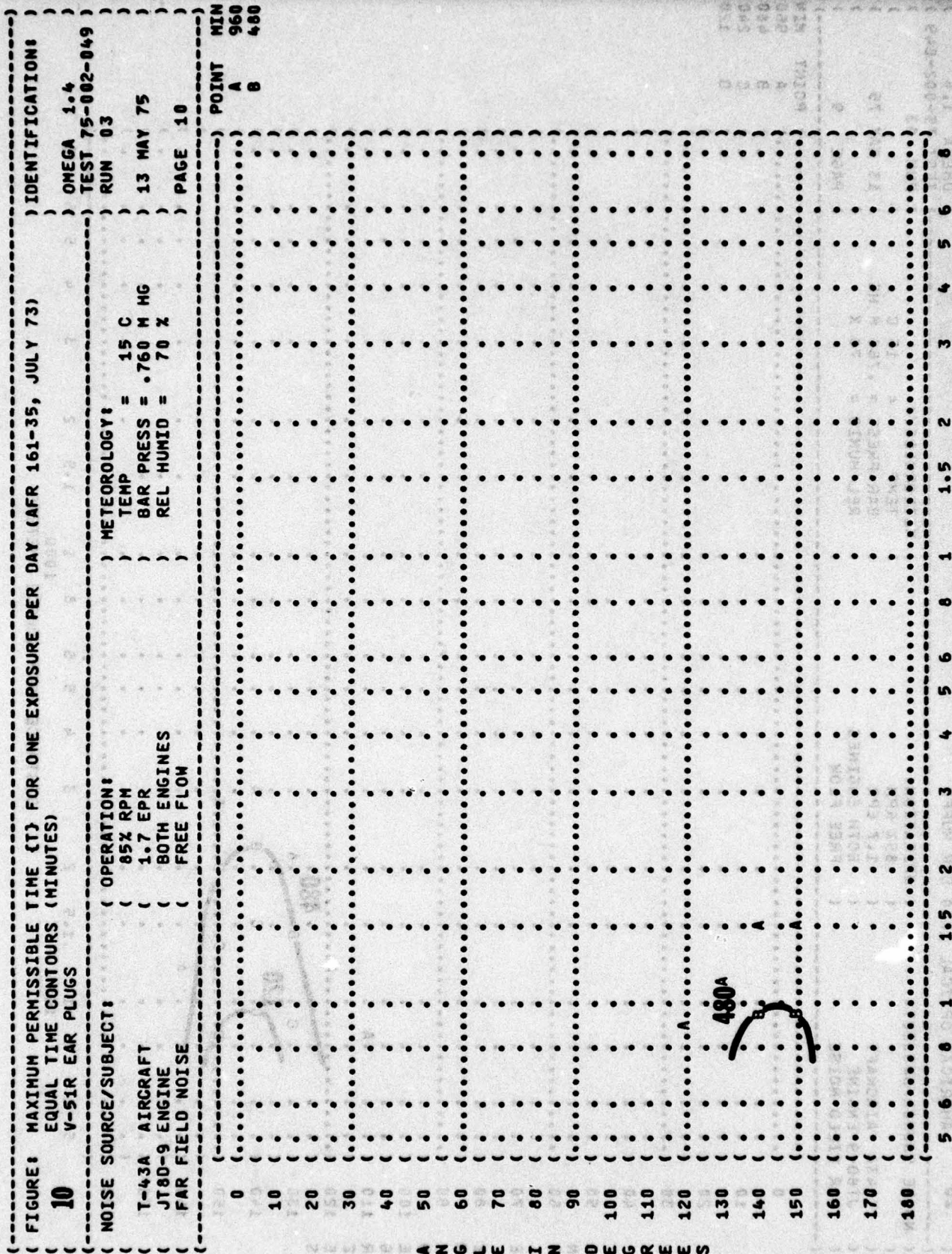


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10 EQUAL TIME CONTOURS (MINUTES)

CONFIT TRIPLE FLANGE EAR PLUGS

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:

T-43A AIRCRAFT ( 85% RPM ) TEMP = 15 C

JT80-9 ENGINE ( 1.7 EPR ) BAR PRESS = .760 M HG

FAR FIELD NOISE ( 80TH ENGINES ) REL HUMID = 70 %

( FREE FLOW )

PAGE 11

POINT MIN

A 960

B 480

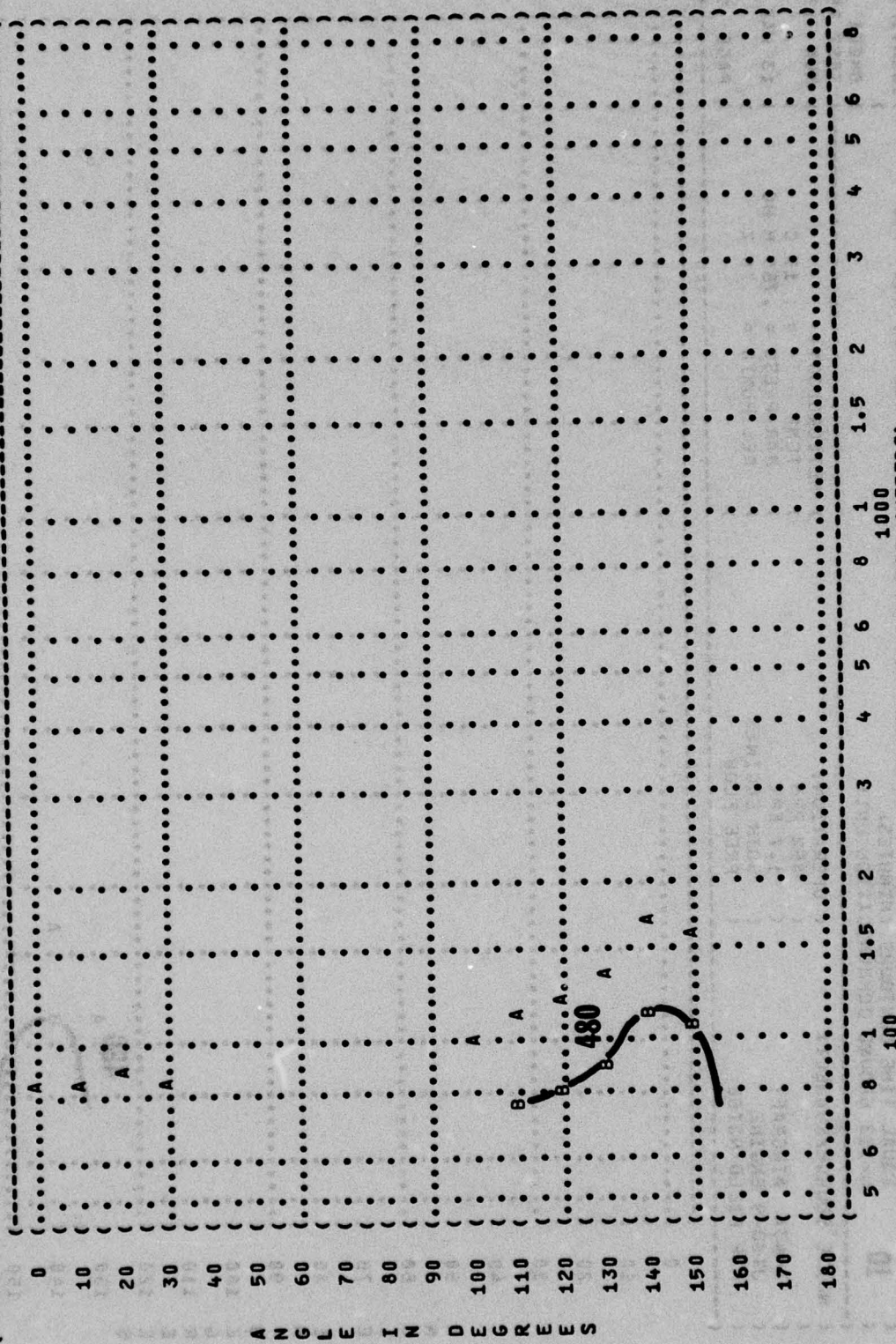










FIGURE 1 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10 EQUAL TIME CONTOURS (MINUTES)

MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:

OPERATION:

90% RPM

1.84 EPR

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

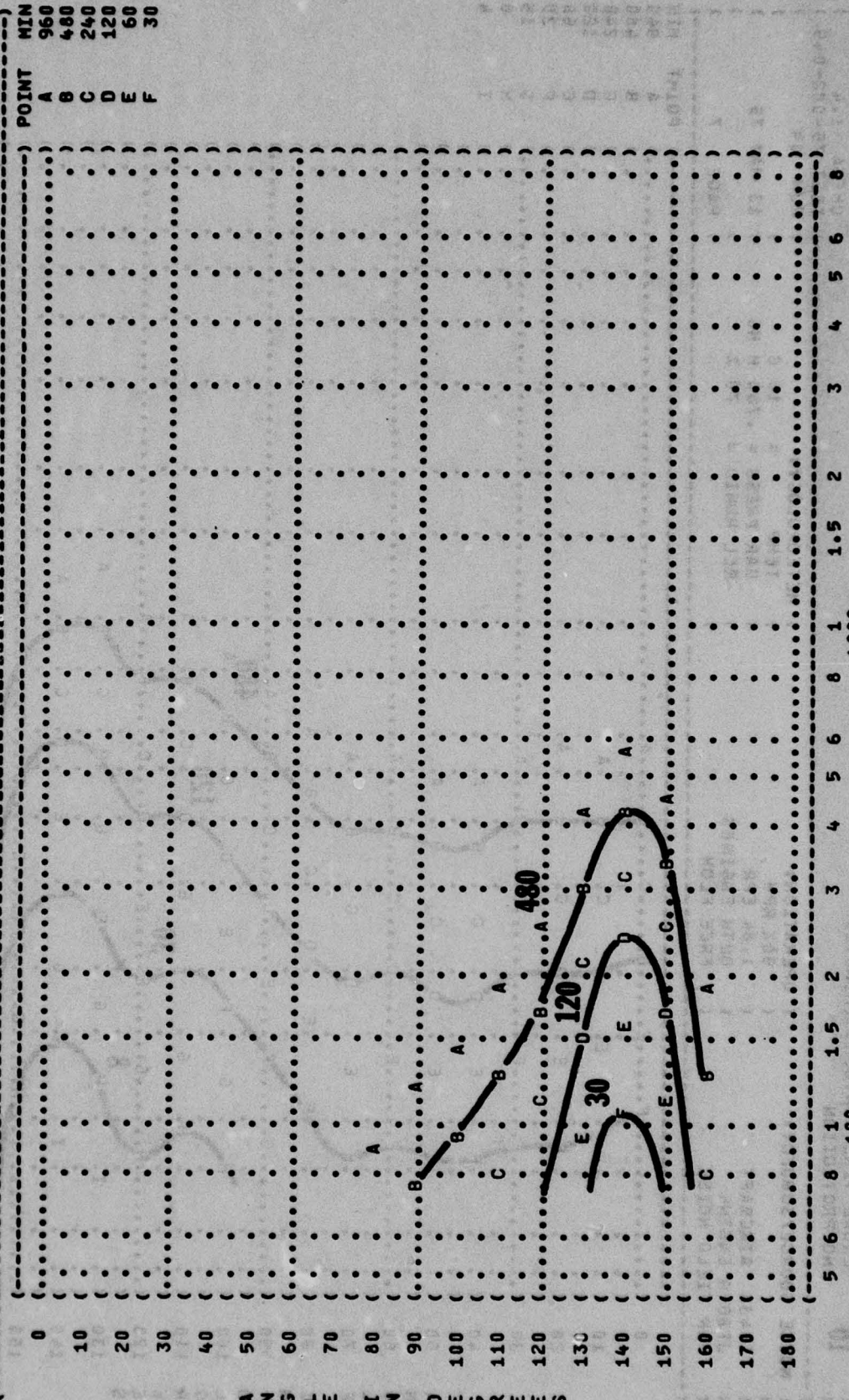
OMEGA 1.4

TEST 75-002-049

RUN 04

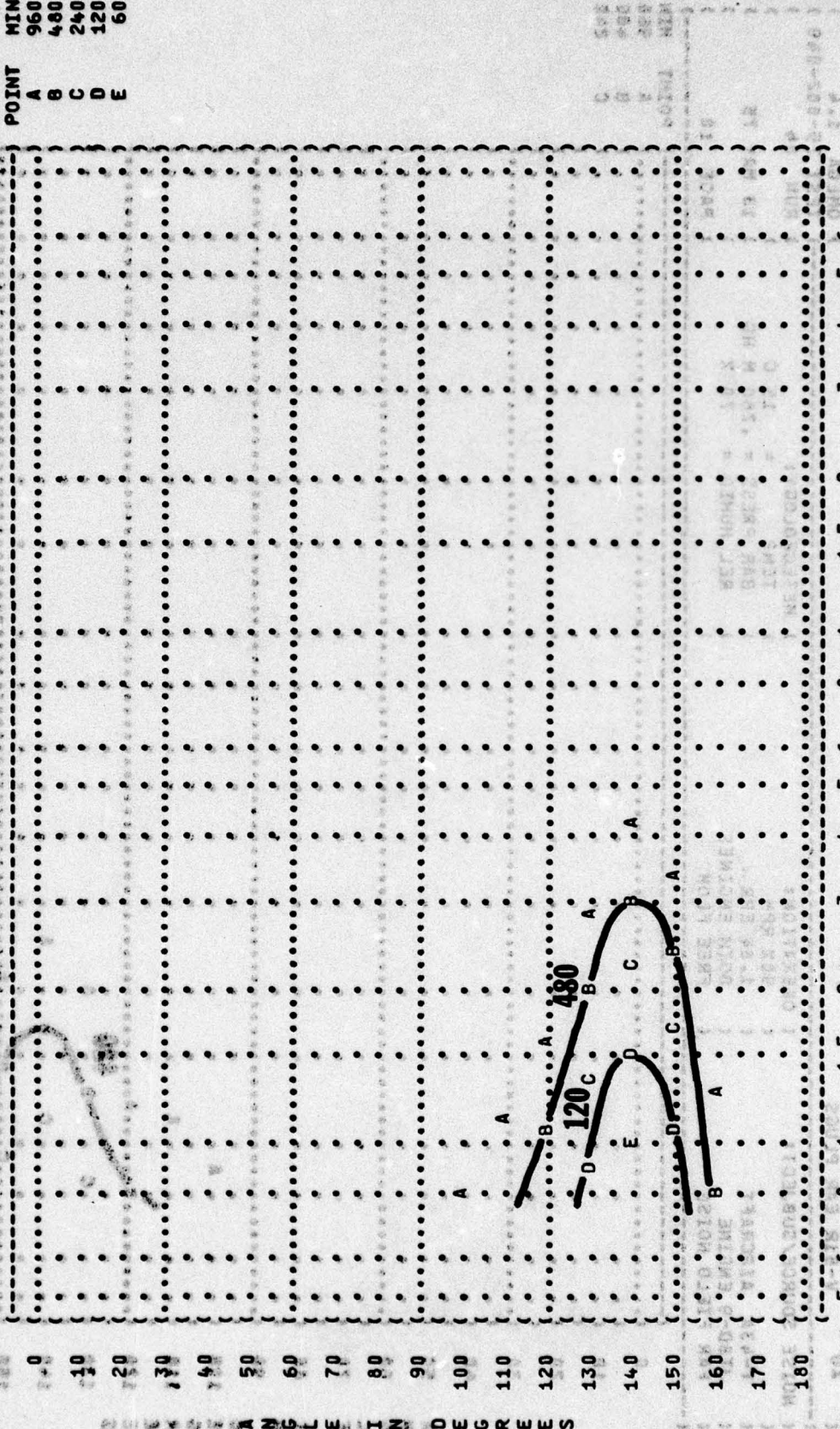
13 MAY 75

PAGE 8



ANGLES

( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (APR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( 10 EQUAL TIME CONTOURS (MINUTES) )  
 ( AMERICAN OPTICAL 1700 EAR MUFFS )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 90% RPM )  
 ( 1.84 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL. HUMID = 70 % )  
 ( 13 MAY 75 )  
 ( RUN 04 )  
 ( PAGE 9 )  
 ( POINT MIN )  
 ( A 960 )  
 ( B 480 )  
 ( C 240 )  
 ( D 120 )  
 ( E 60 )



5 6 8 1 1.5 2 3 4 5 6 8 1000  
 10 100  
 DISTANCE FROM SOURCE (METERS)



**FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)**

10 EQUAL TIME CONTOURS (MINUTES)

## V-51R EAR PLUGS

### IDENTIFICATION:

**OMEGA 1.4**

**TEST 75-002-049**

**RUN 04**

## METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 H HG

REL HUMID = 70 %

1-43A AIRCRAFT ( 1.84 EPR  
JT80-9 ENGINE ( BOTH ENGINES

**FAR FIELD NOISE**

00000000000000000000000000000000

## FREE FLOW

• • • • •

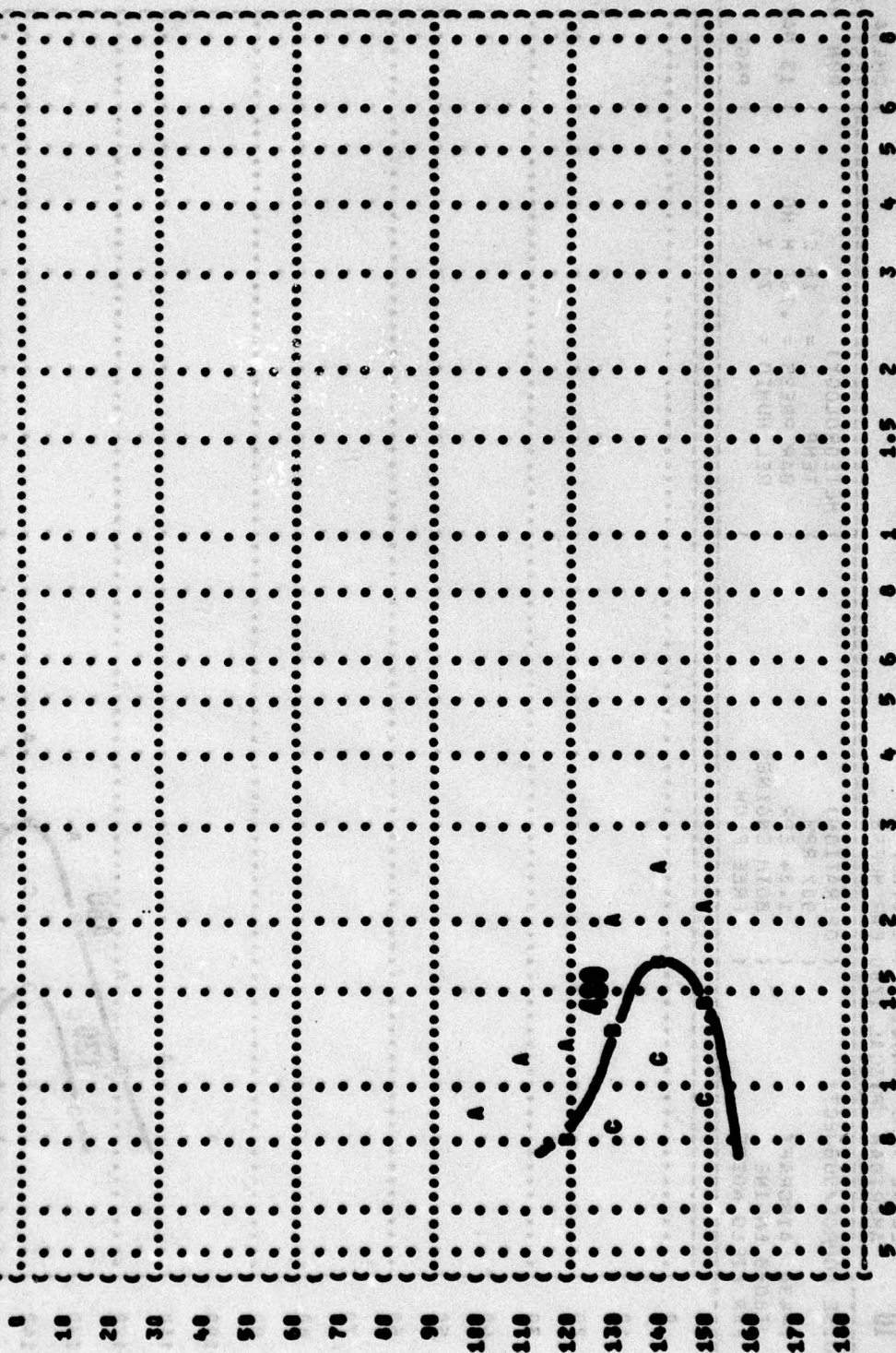
## POINT

096 A

004

**260**

33



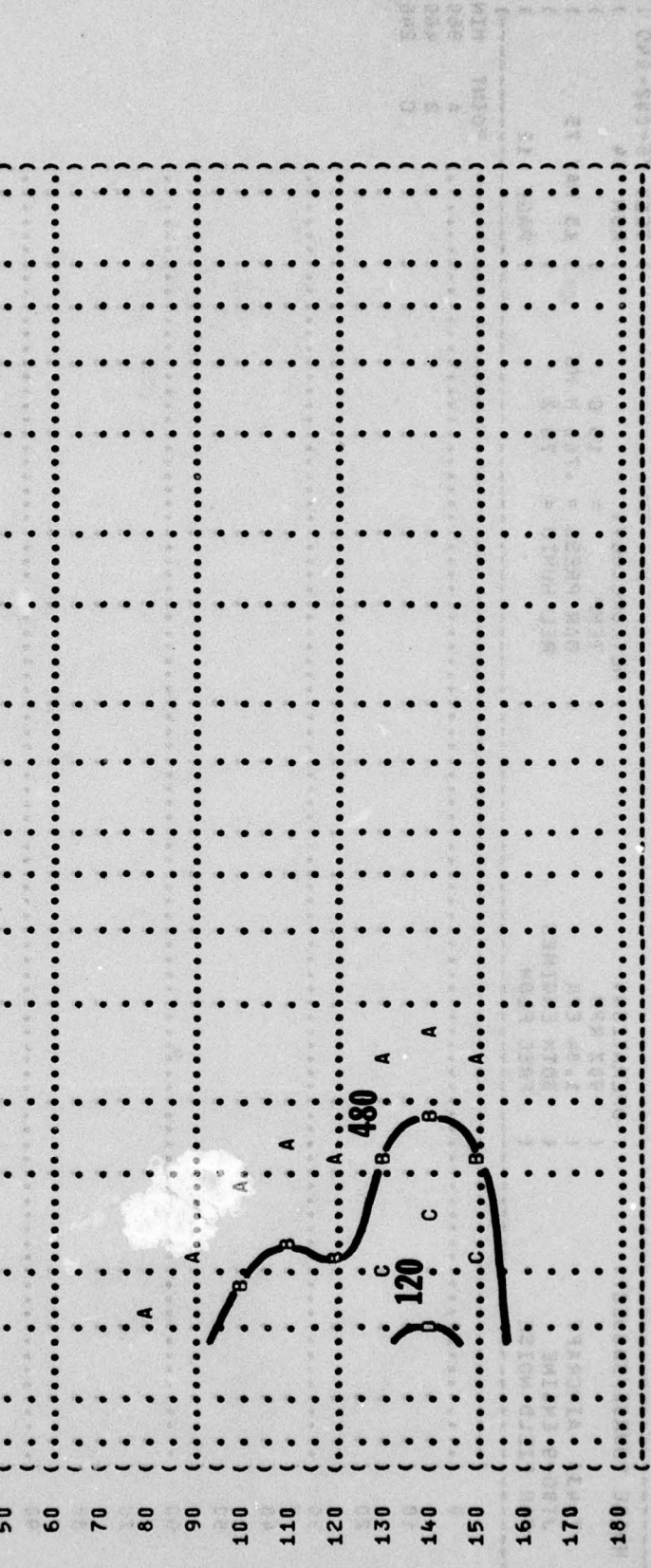
**1000  
DISTANCE FROM SOURCE (METERS)**

) IDENTIFICATION: )  
 ) OMEGA 1.4  
 ) TEST 75-002-049  
 ) RUN 04  
 ) 13 MAY 75  
 ) PAGE 11

) METEOROLOGY: )  
 ) TEMP = 15 C  
 ) BAR PRESS = .760 M HG  
 ) REL HUMID = 70 %

) OPERATION: )  
 ) 90% RPM  
 ) 1.84 EPR  
 ) BOTH ENGINES  
 ) FREE FLOW

) AIRCRAFT  
 ) JT8D-9 ENGINE  
 ) FAR FIELD NOISE



) POINT MIN  
 ) A 960  
 ) B 480  
 ) C 240  
 ) D 120

) DISTANCE FROM SOURCE (METERS)









FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

10 EQUAL TIME CONTOURS (MINUTES)

MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:

OPERATION:

MILITARY POWER

100% RPM, 2.01 EPR

BOTH ENGINES

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

T-43A AIRCRAFT

JT8D-9 ENGINE

FAR FIELD NOISE

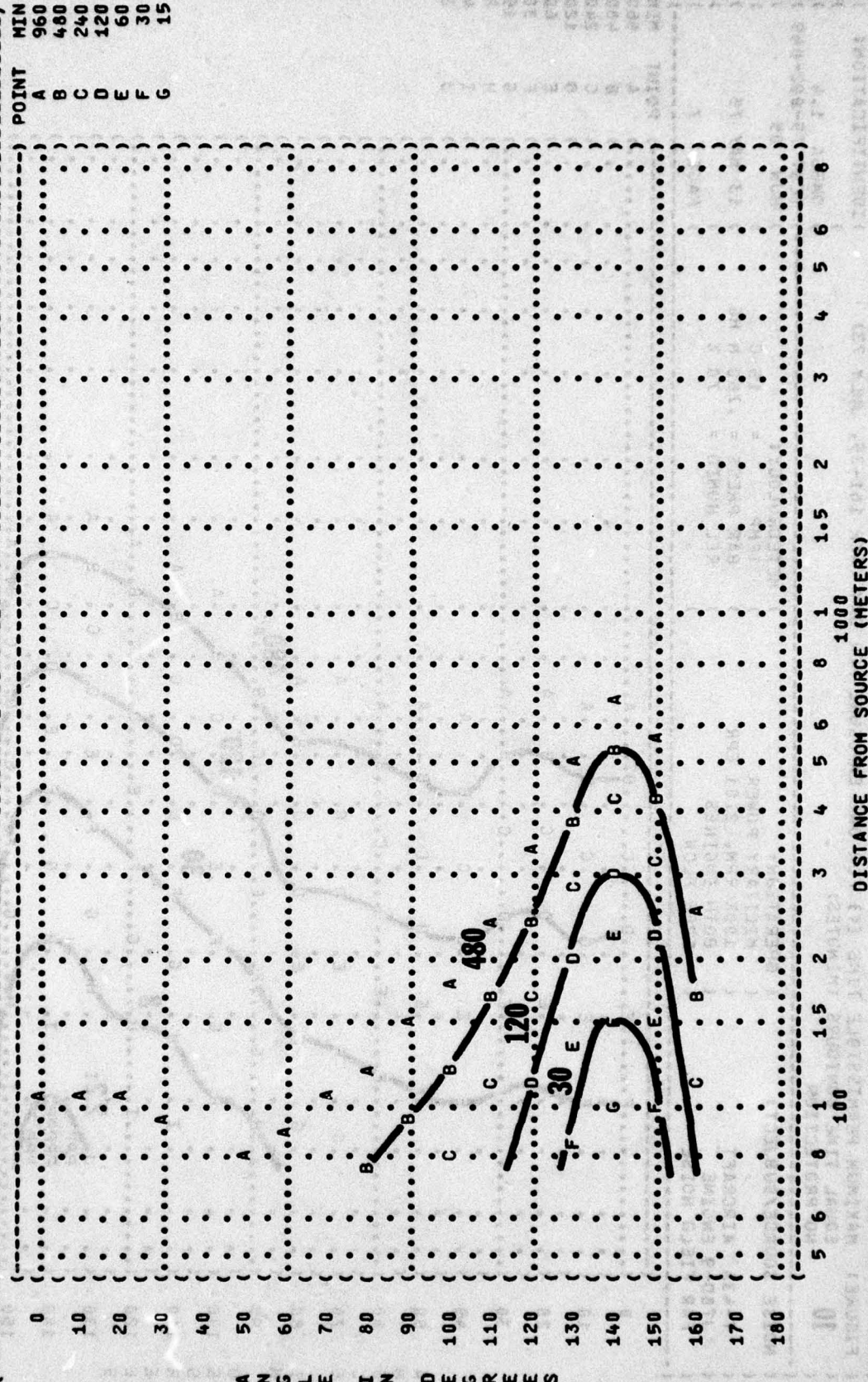
OMEGA 1.4

TEST 75-002-049

RUN 05

13 MAY 75

PAGE 8



( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( 10 )  
 ( AMERICAN OPTICAL 1700 EAR MUFFS )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( MILITARY POWER )  
 ( 100% RPM, 2.01 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( PAGE 9 )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 05 )

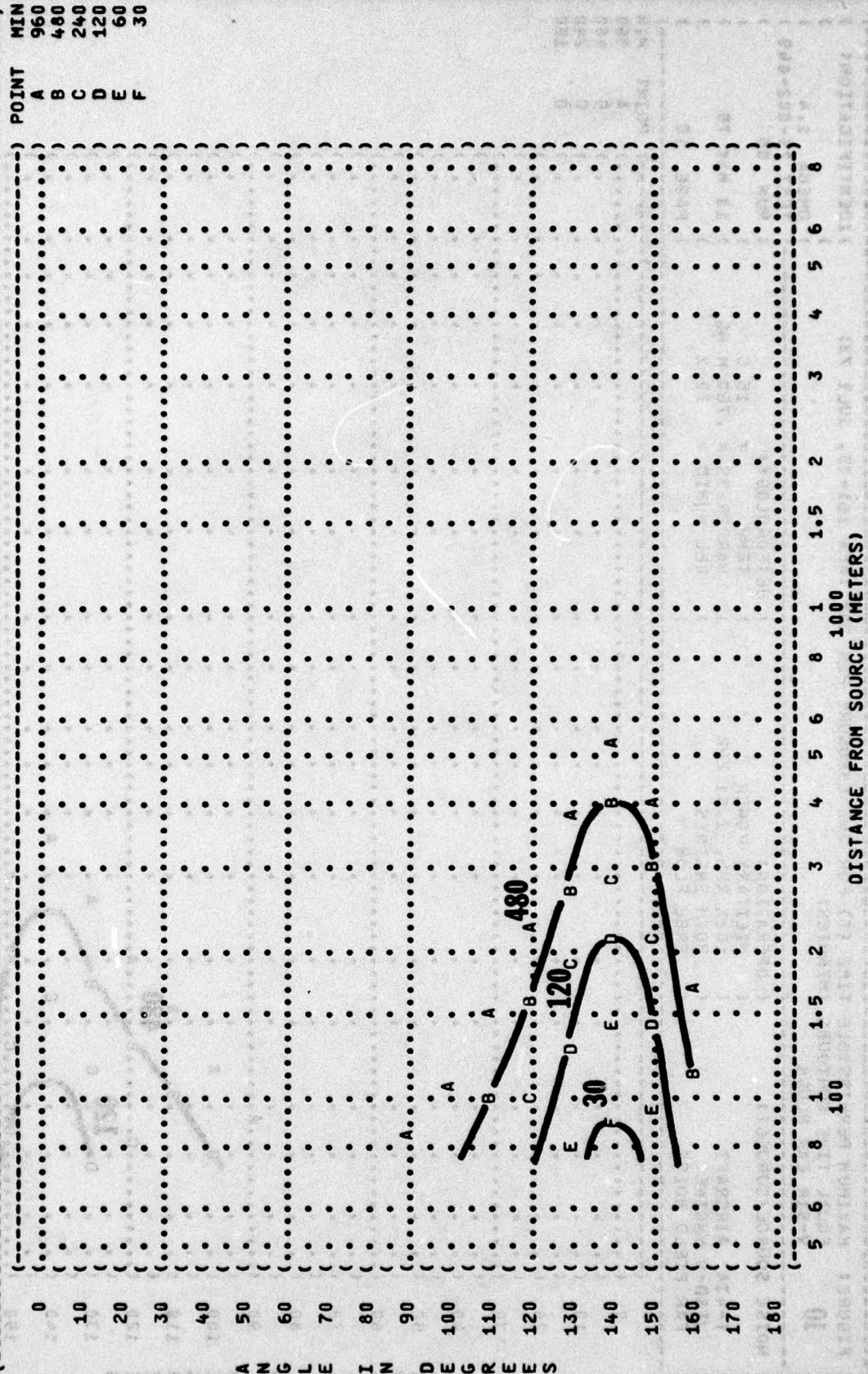




FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

### EQUAL TIME CONTOURS (MINUTES)

**V-51R EAR PLUGS**

## IDENTIFICATION:

**OMEGA 1.4**

TEST 75-002-049

100. 1 2  
RUN 05

13 MAY 75

**PAGE 10**

## ● METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

**( OPERATION:**

## MILITARY POWER

100% RPM, 2.01 EPR

**BOTH ENGINES**

FREE FLOW

**NOISE SOURCE/SUBJECT:**

**T-43A AIRCRAFT**

**JT8D-9 ENGINE**

FAR FIELD NOISE

## POINT

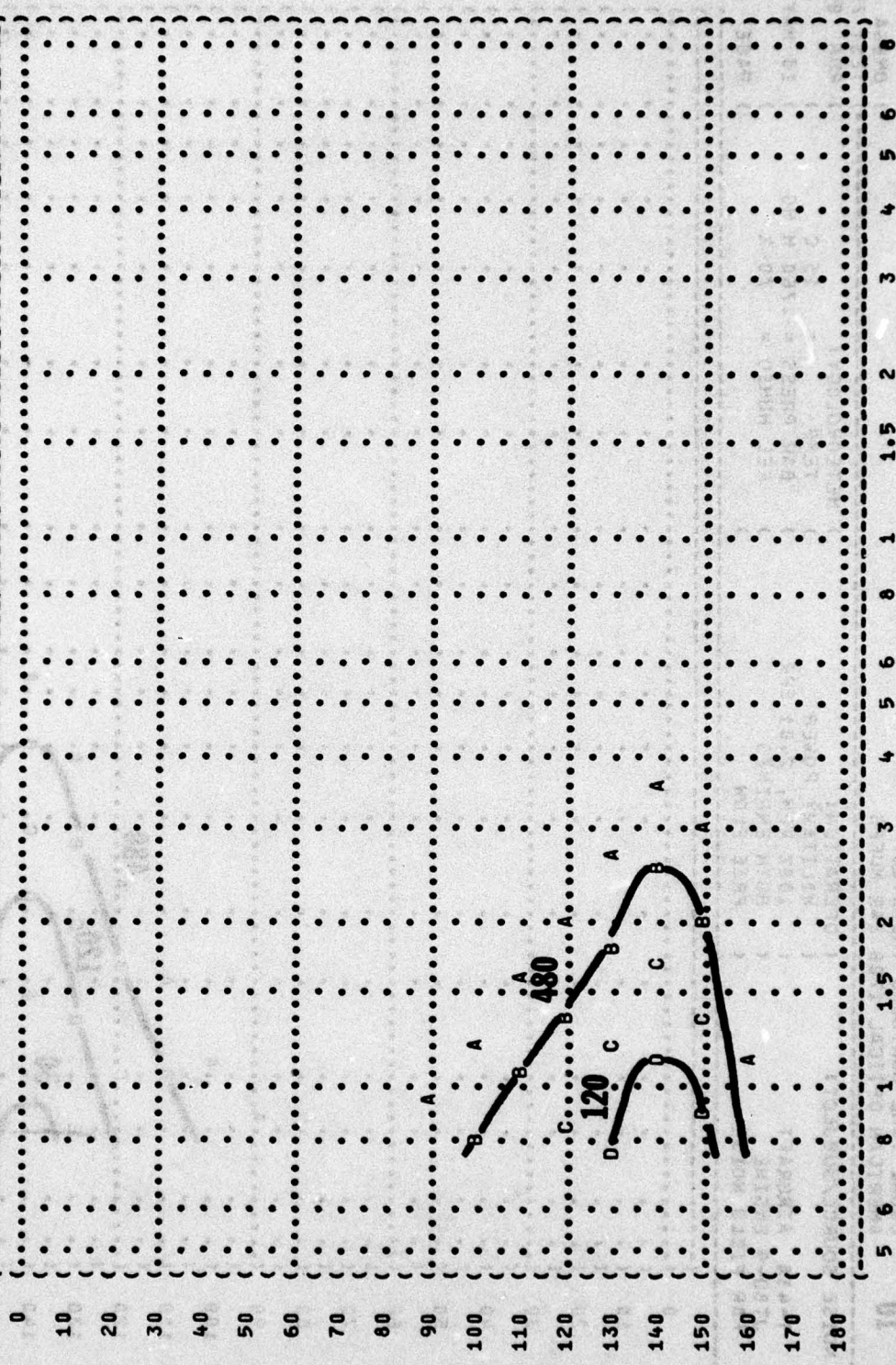
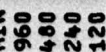
**MIN**

—

38

U

2



ANGLE IN DEGREES

1000  
DISTANCE FROM SOURCE (METERS)

**100**

**1000**

68





FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

10 EQUAL TIME CONTOURS (MINUTES)

H-133 GROUND COMMUNICATION UNIT

NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: ) IDENTIFICATION: )

( ( MILITARY POWER ) ) OMEGA 1.4

( ( 100% RPM, 2.01 EPR ) ) TEST 75-002-049

( ( BOTH ENGINES ) ) RUN 05

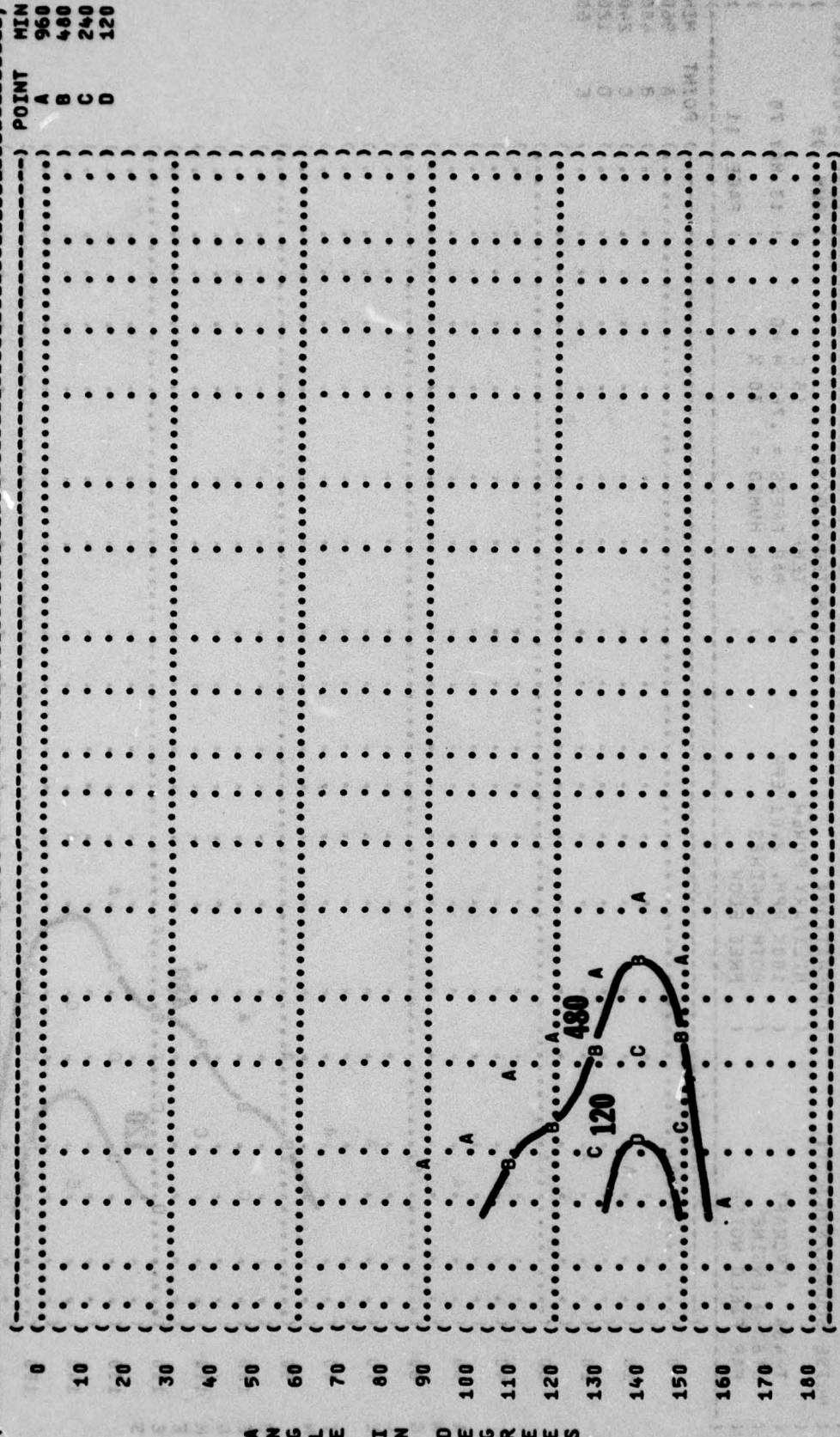
( ( FREE FLOW ) ) TEMP = 15 C

T-43A AIRCRAFT ) BAR PRESS = .760 M HG

JT80-9 ENGINE ) REL HUMID = 70 %

FAR FIELD NOISE ) ) 13 MAY 75

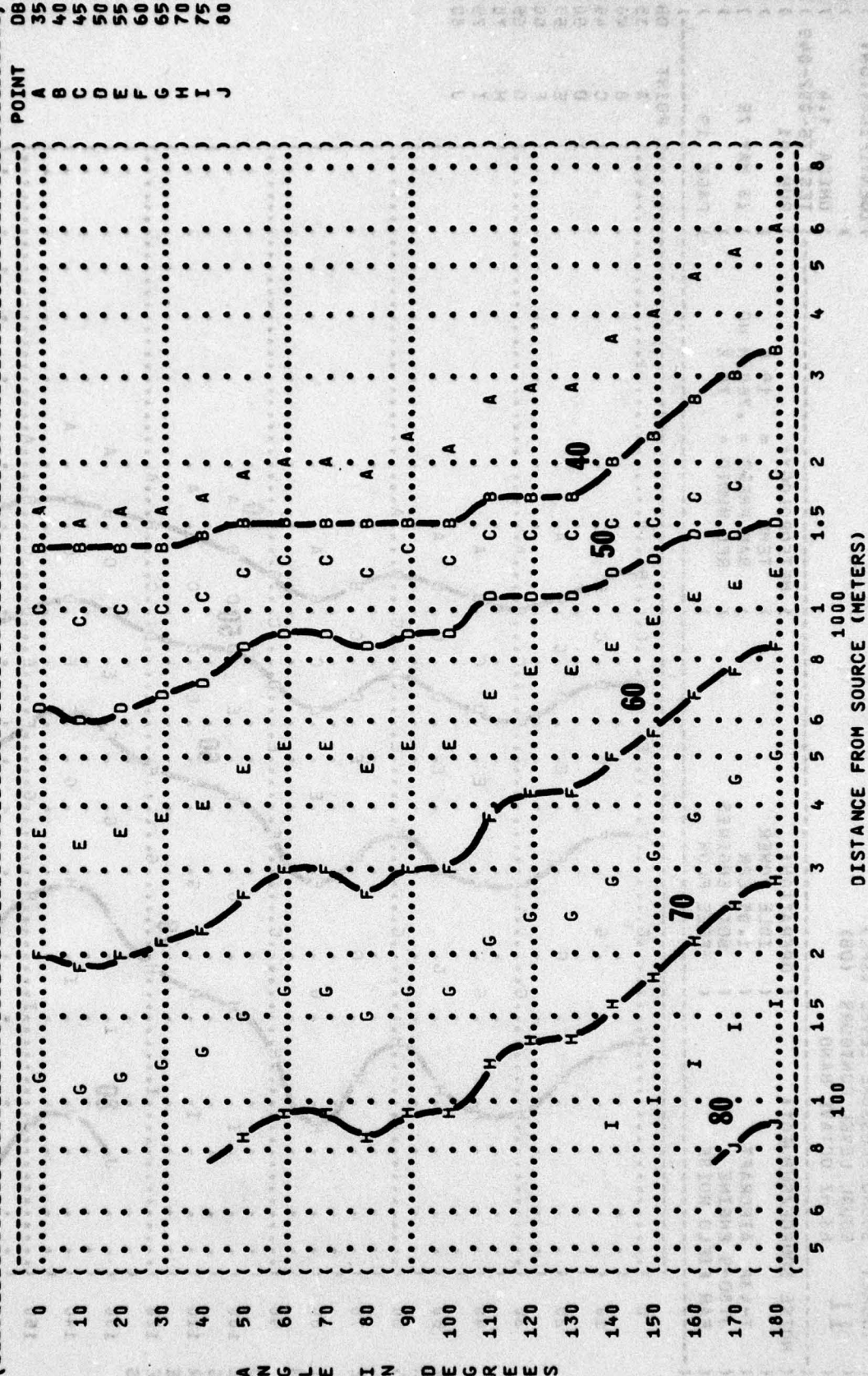
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DISTANCE FROM SOURCE (METERS)

FIGURE: SOUND PRESSURE LEVEL (SPL)  
 11 EQUAL LEVEL CONTOURS (DB)  
 31.5 HZ OCTAVE BAND

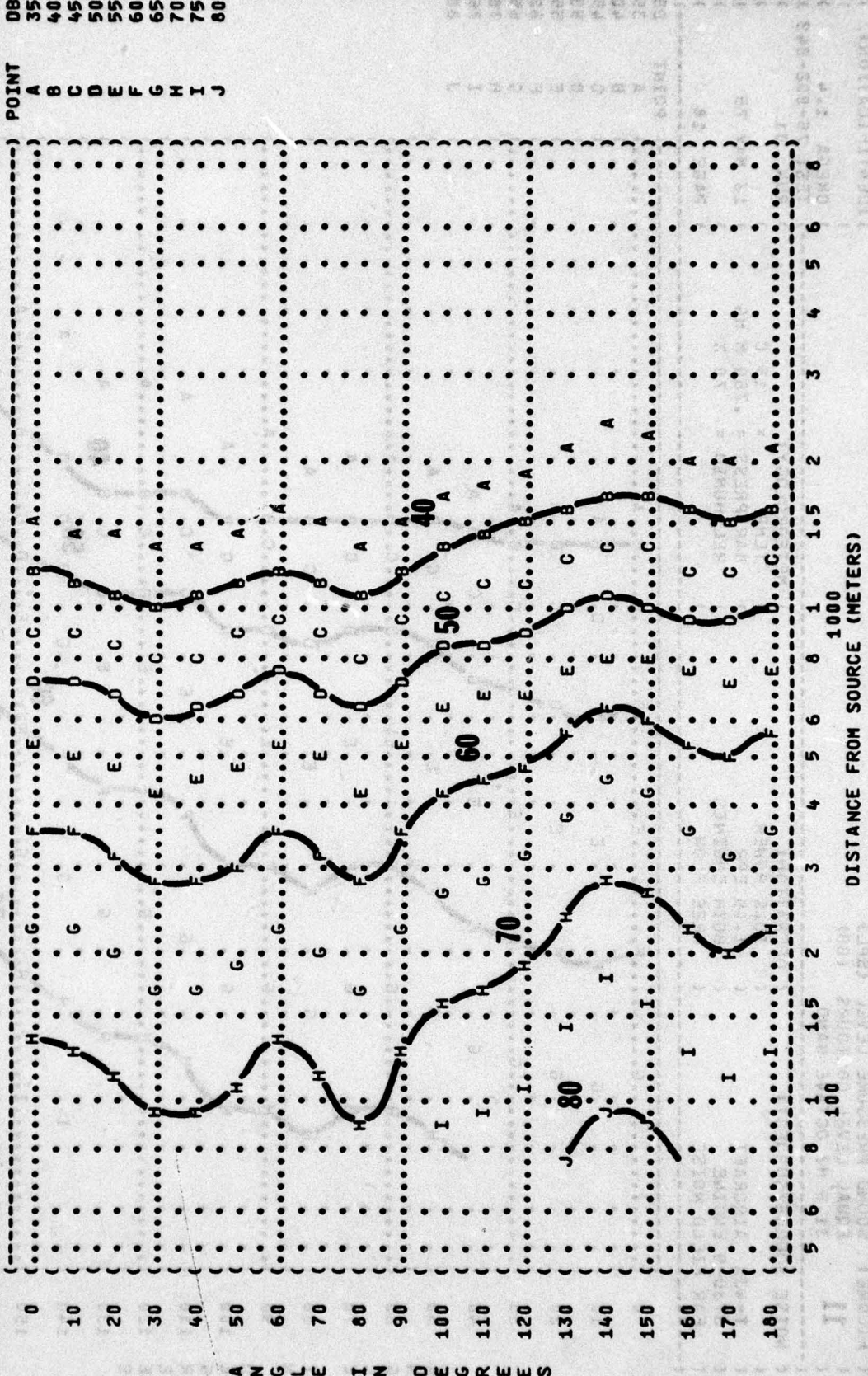
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 ( T-43A AIRCRAFT ( IDLE POWER ) TEMP = 15 C ) OMEGA 1.4  
 ( JT80-9 ENGINE ( 1.05 EPR ) BAR PRESS = .760 M HG ) TEST 75-002-049  
 ( FAR FIELD NOISE ( BOTH ENGINES ) REL HUMID = 70 % ) RUN 01  
 ( FREE FLOW ) ) 13 MAY 75  
 ) PAGE 18



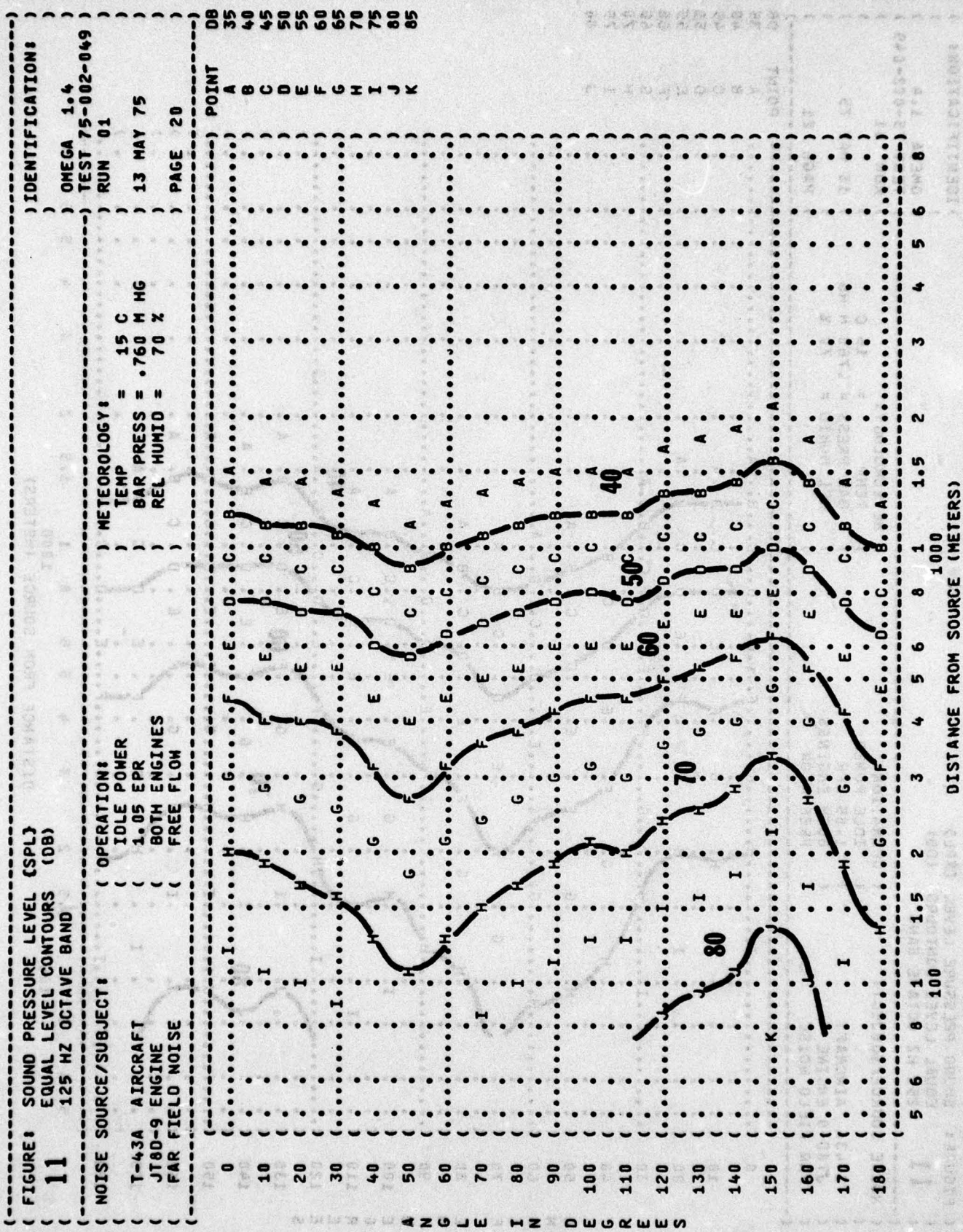
DISTANCE FROM SOURCE (METERS)



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 63 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( IDLE POWER  
 ( JT8D-9 ENGINE ( 1.05 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 H HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 01  
 ( 13 MAY 75  
 ( PAGE 19

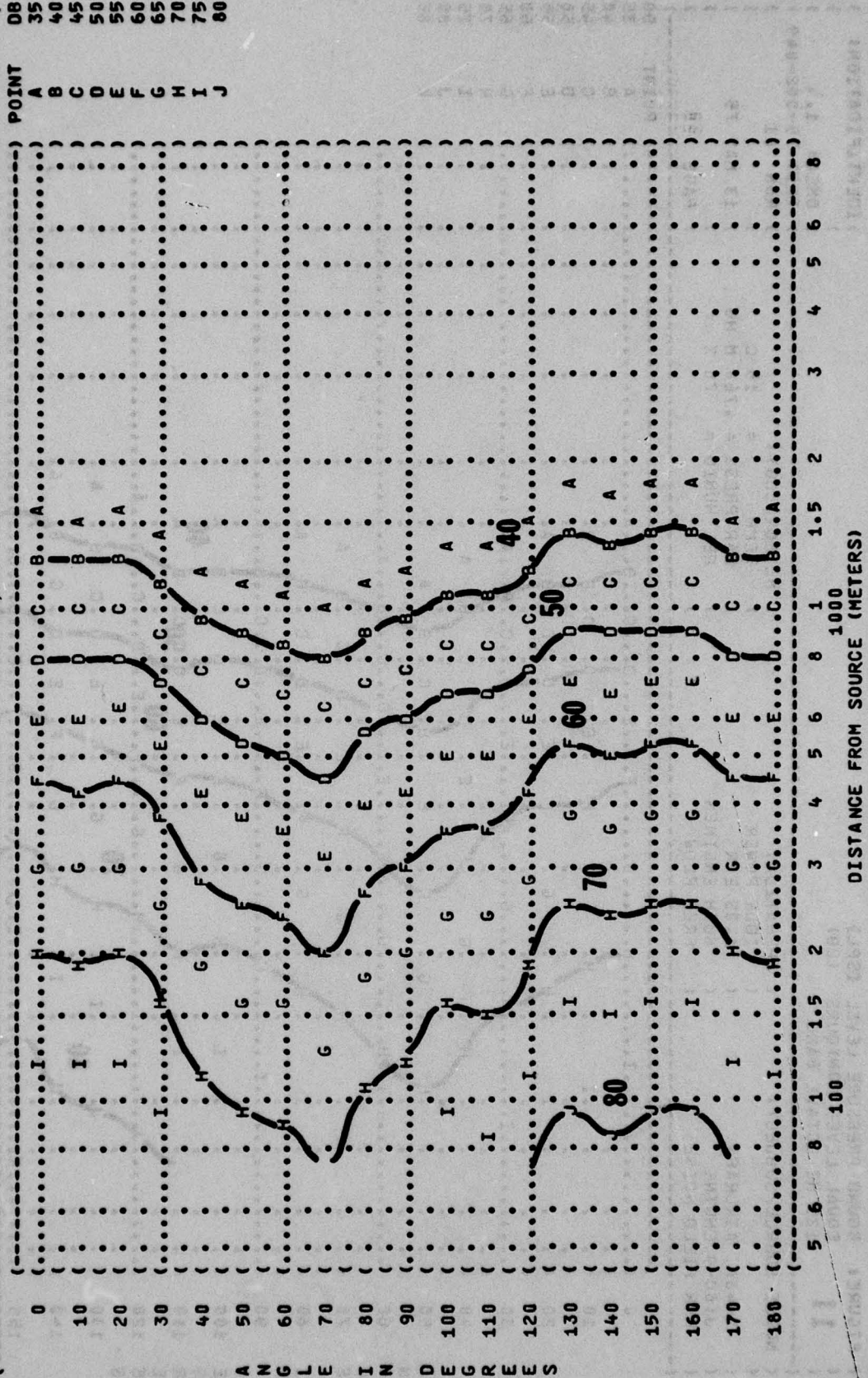


DISTANCE FROM SOURCE (METERS)





( FIGURE: SOUND PRESSURE LEVEL {SPL}  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 250 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( IDENTIFICATION: ( )  
 ( T-43A AIRCRAFT ( IDLE POWER ( TEMP = 15 C ( OMEGA 1.4  
 ( JT80-9 ENGINE ( BOTH ENGINES ( BAR PRESS = .760 M HG ( TEST 75-002-049  
 ( FAR FIELD NOISE ( FREE FLOW ( REL HUMID = 70 % ( RUN 01  
 ( 13 MAY 75 ( PAGE 21

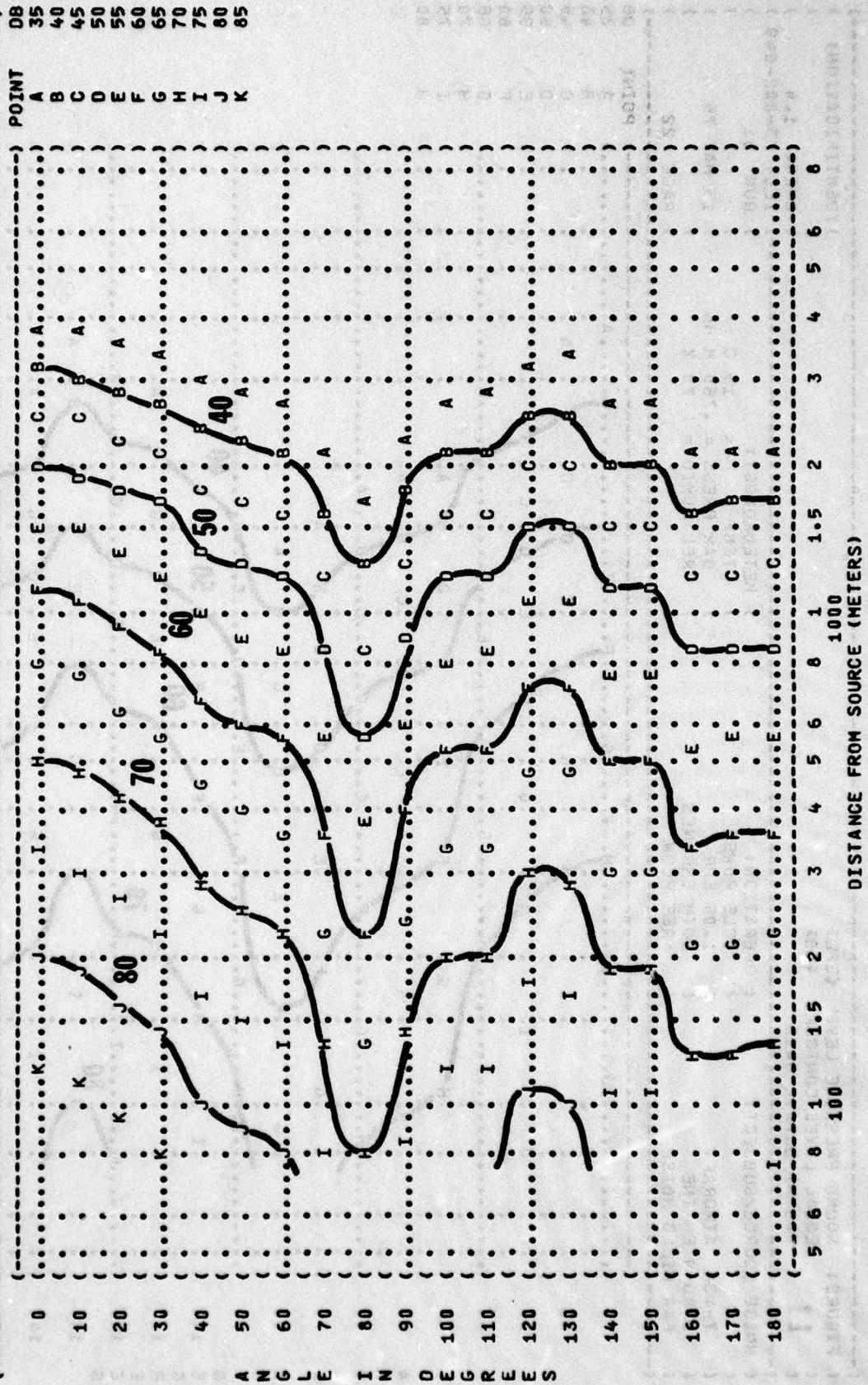


DISTANCE FROM SOURCE (METERS)





( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 1000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( IDENTIFICATION: )  
 ( T-43A AIRCRAFT ( IDLE POWER ( TEMP = 15 C ( OMEGA 1.4  
 ( JT8D-9 ENGINE ( 1.05 EPR ( BAR PRESS = .760 M HG ( TEST 75-002-049  
 ( FAR FIELD NOISE ( BOTH ENGINES ( REL HUMID = 70 % ( RUN 01  
 ( ( FREE FLOW ( 13 MAY 75  
 ( ( ( ( PAGE 23 )



AD-A048 833 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1  
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 73. T-43A AIR--ETC(U)  
JAN 77 R G POWELL  
UNCLASSIFIED AMRL-TR-75-50-VOL-73 NL

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1  
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 73. T-43A AIR--ETC(U)  
JAN 77 R G POWELL  
AMRL-TR-75-50-VOL-73 NL

NL

**UNCLASSIFIED**

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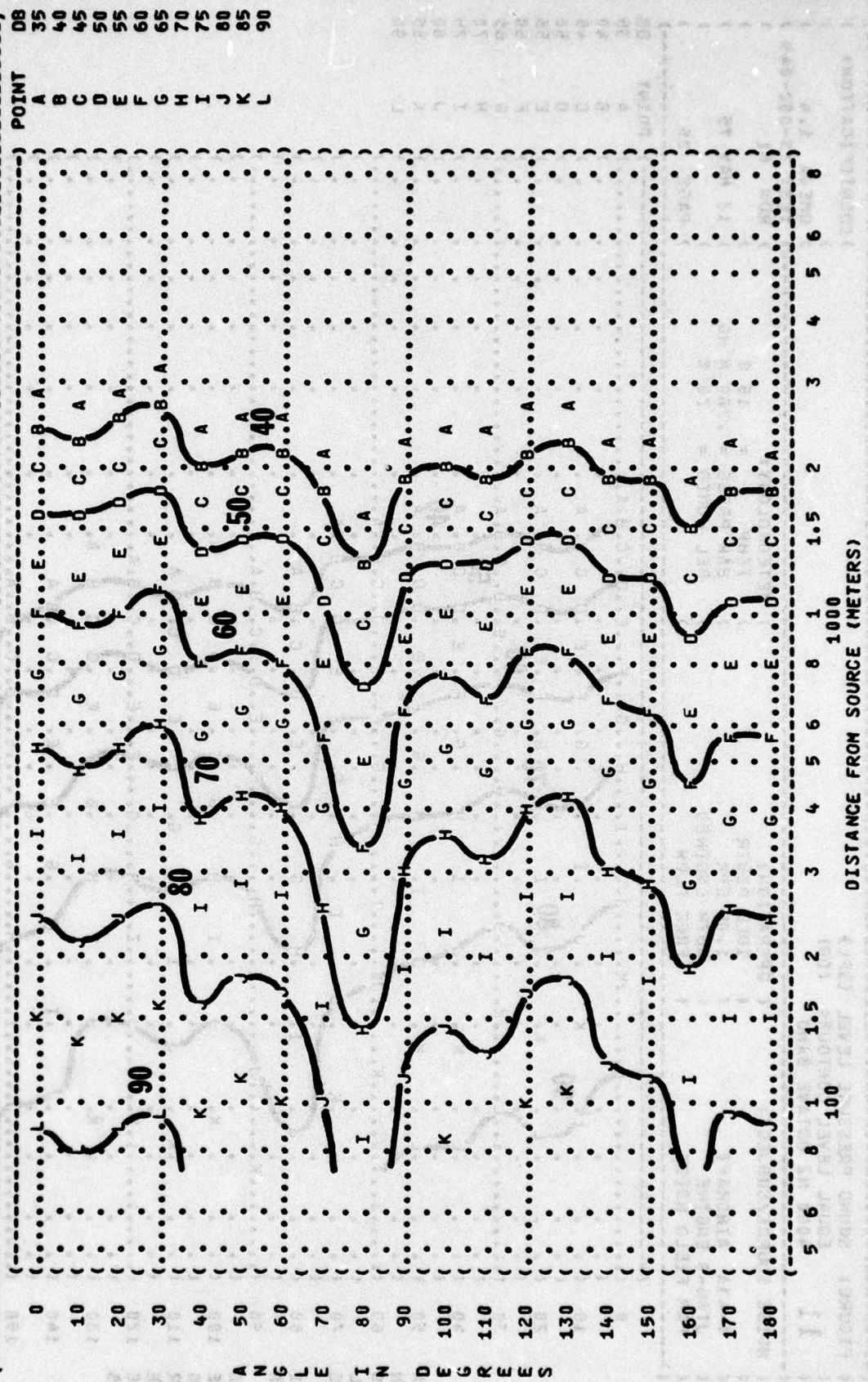
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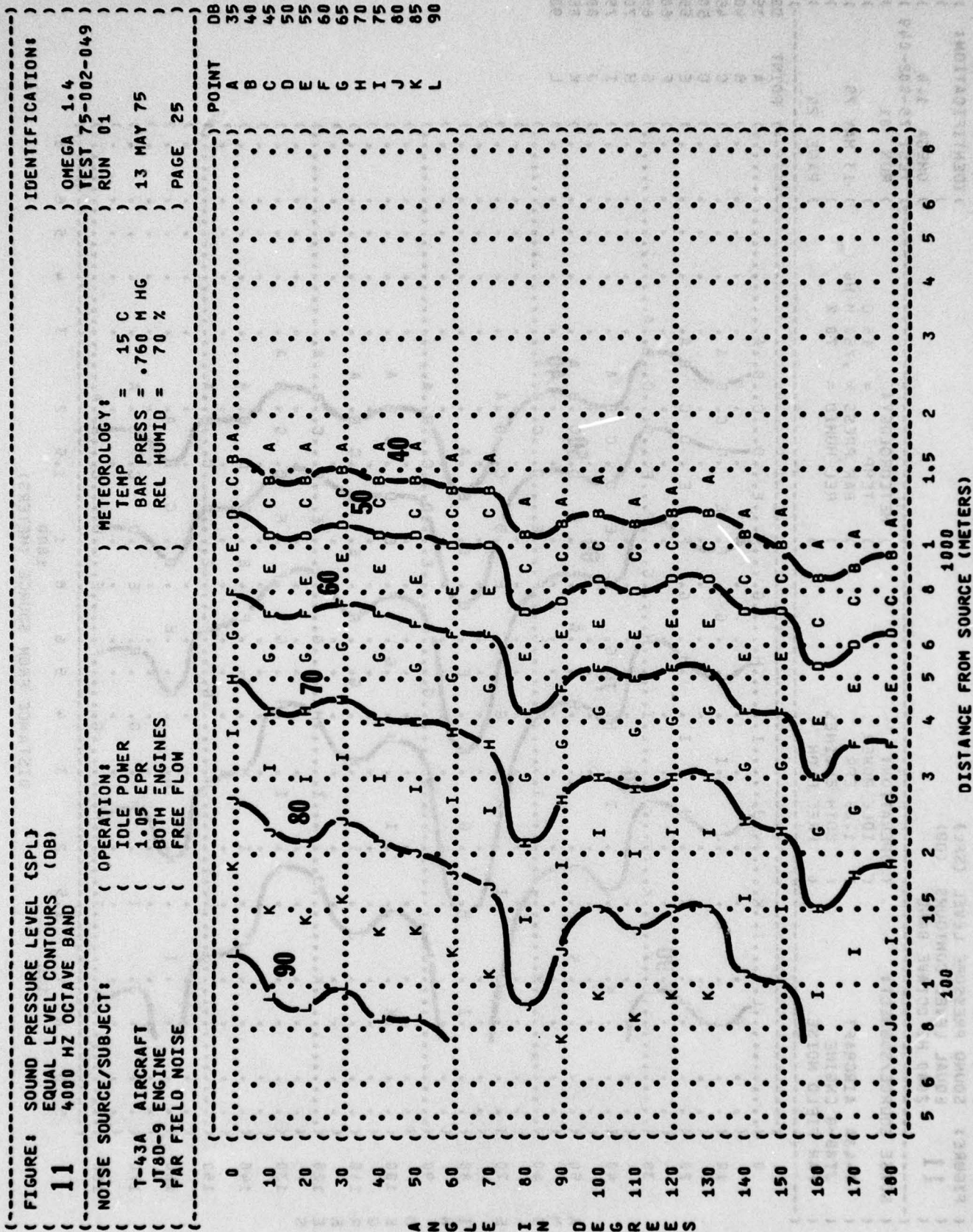
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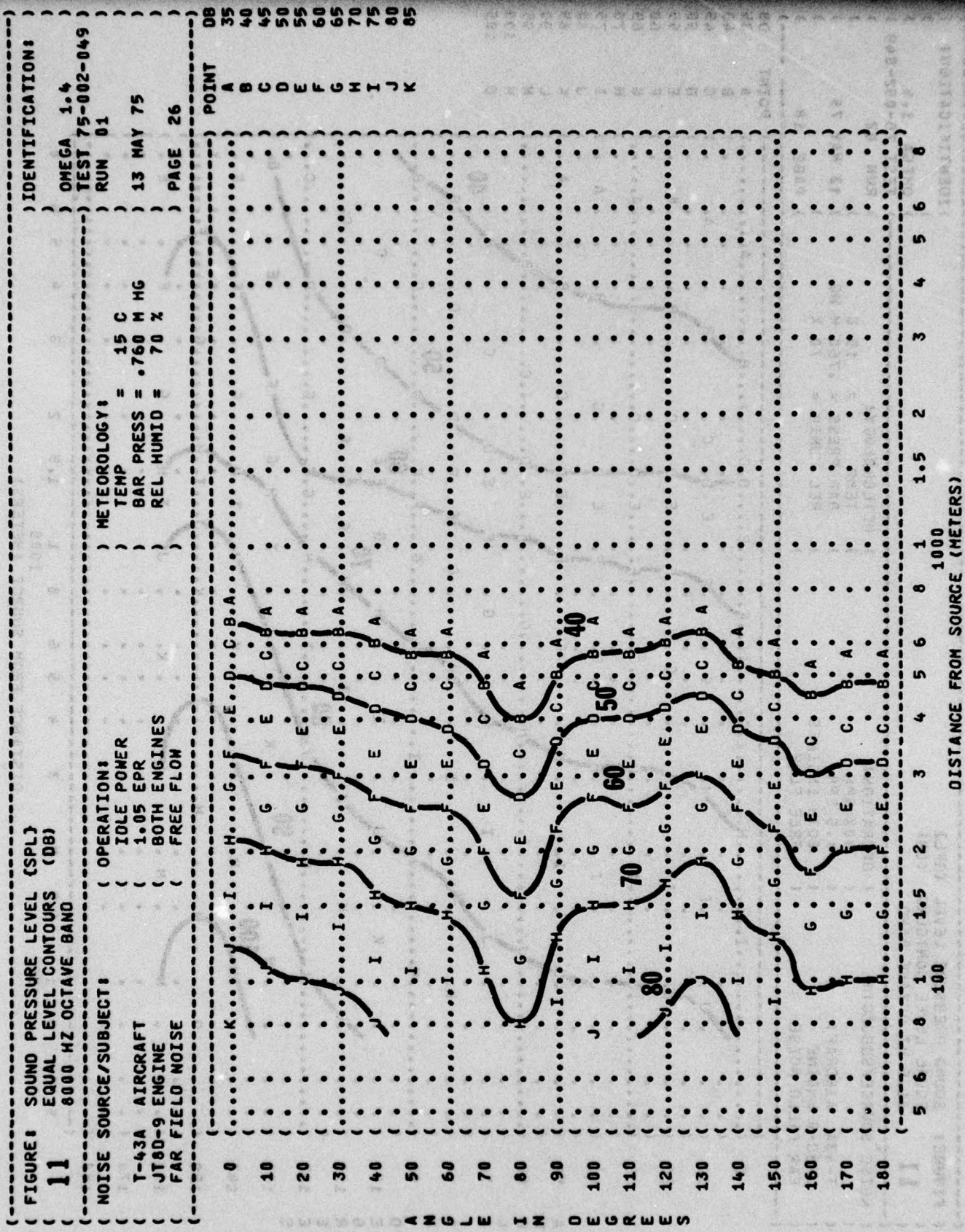


( ( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( ( 2000 HZ OCTAVE BAND  
 ( ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( IDENTIFICATION: ( )  
 ( ( T-43A AIRCRAFT ( IDLE POWER ( TEMP = 15 C ( ) OMEGA 1.4  
 ( ( JT8D-9 ENGINE ( 1.05 EPR ( BAR PRESS = .760 M HG ( ) TEST 75-002-049  
 ( ( FAR FIELD NOISE ( BOTH ENGINES ( REL HUMID = 70 % ( ) RUN 01  
 ( ( FREE FLOW ( ) 13 MAY 75 ( )  
 ( ( ) ( ) ( ) ( ) PAGE 24 ( )









**FIGURE: SOUND PRESSURE LEVEL {SPL}  
EQUAL LEVEL CONTOURS (DB)  
31.5 HZ OCTAVE BAND**

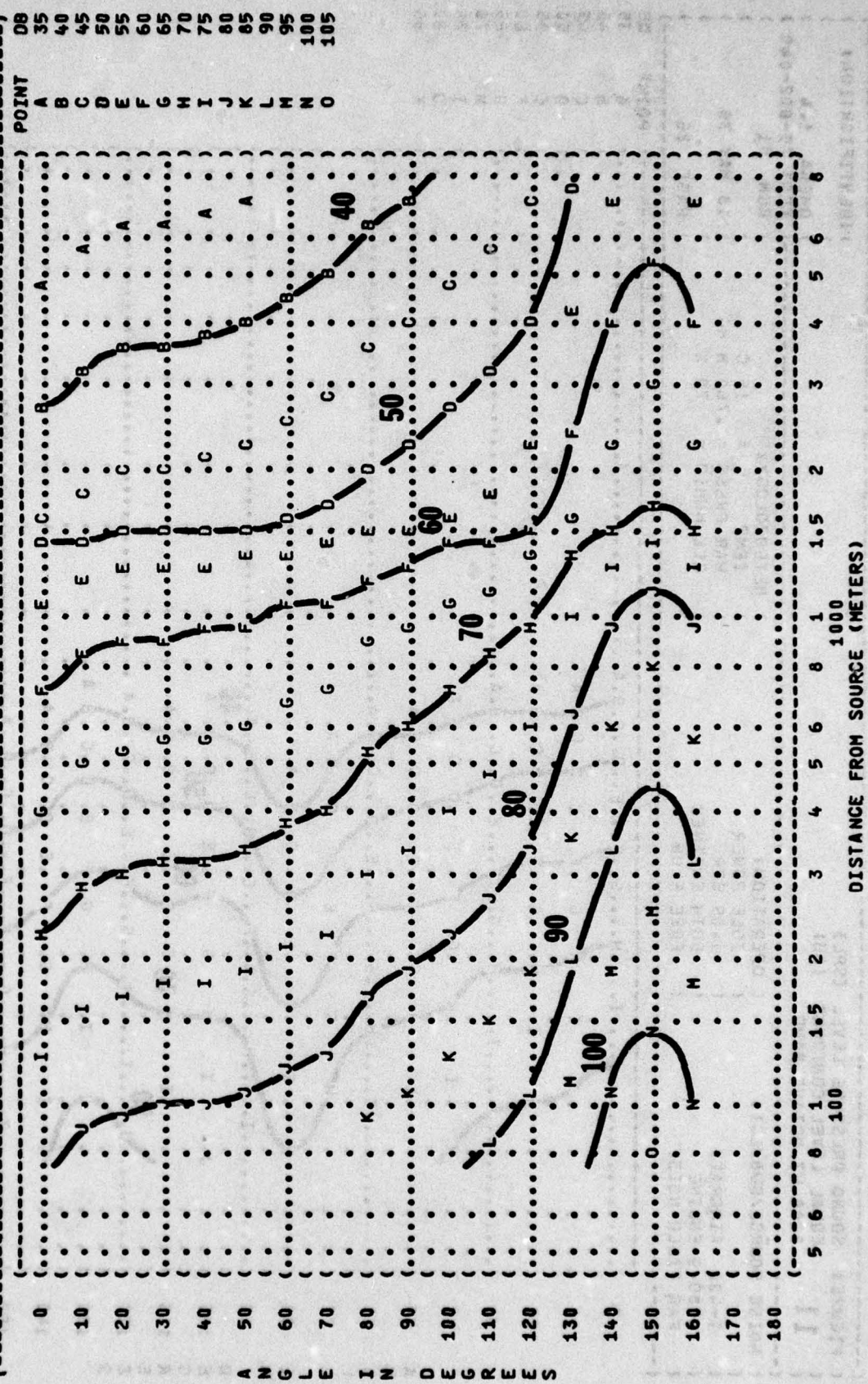
IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-049  
RUN 02

METEOROLOGY:  
TEMP  
BAR PRESS  
REL HUMID

( OPERATION:  
( 80% RPM  
( 1.5 EPR  
( BOTH ENGINES  
( FREE FLOW

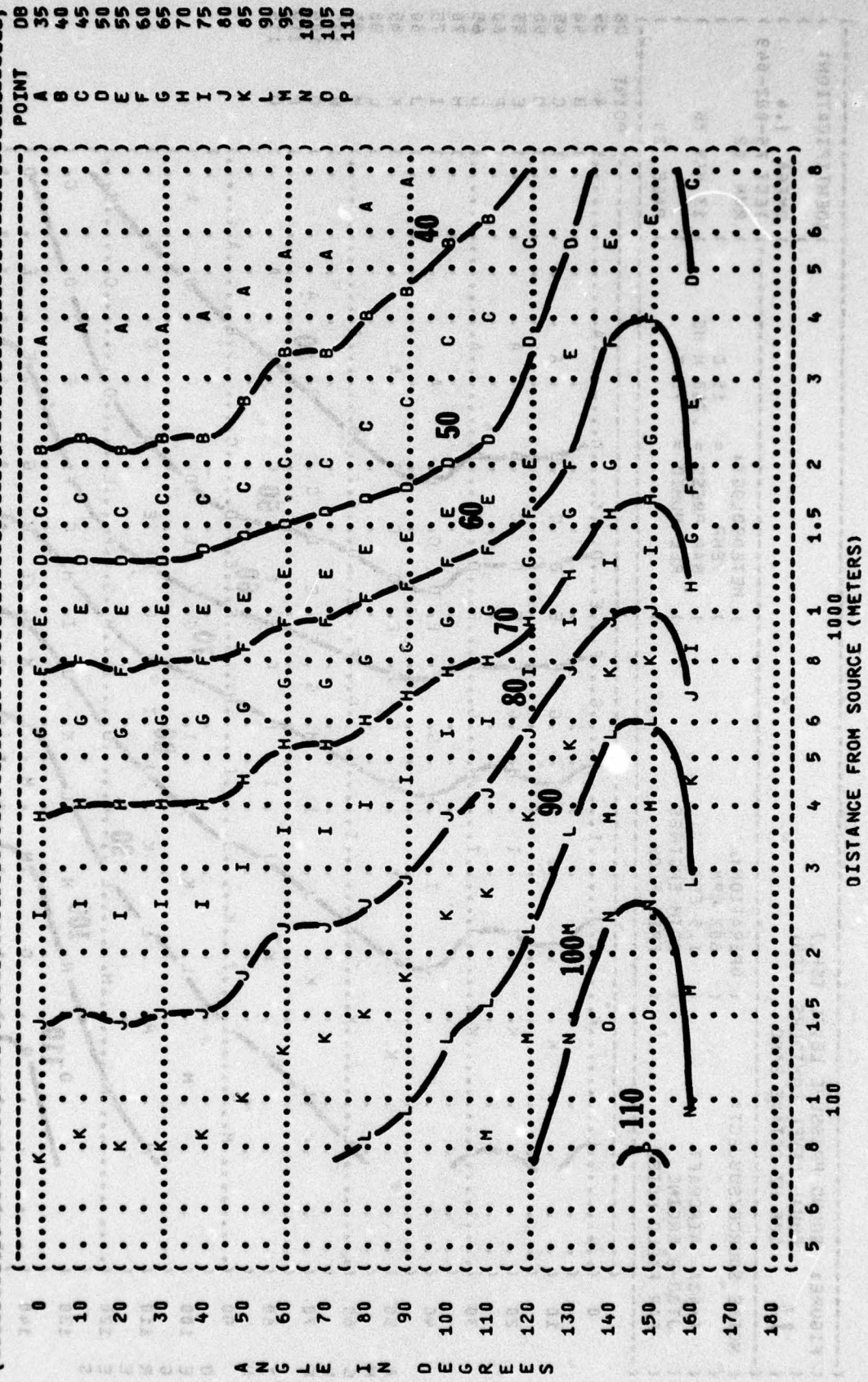
NOISE SOURCE/SUBJECT:  
T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

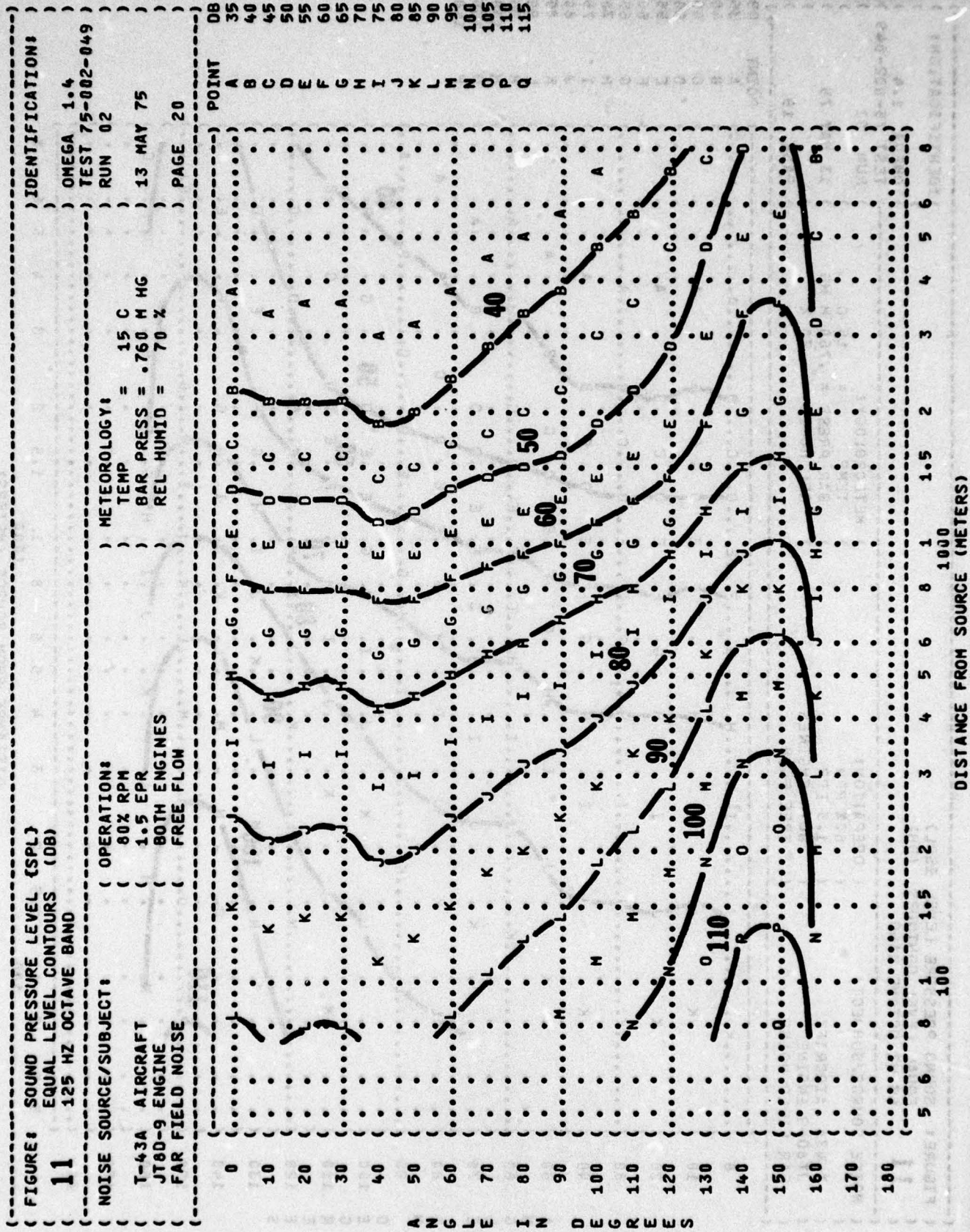
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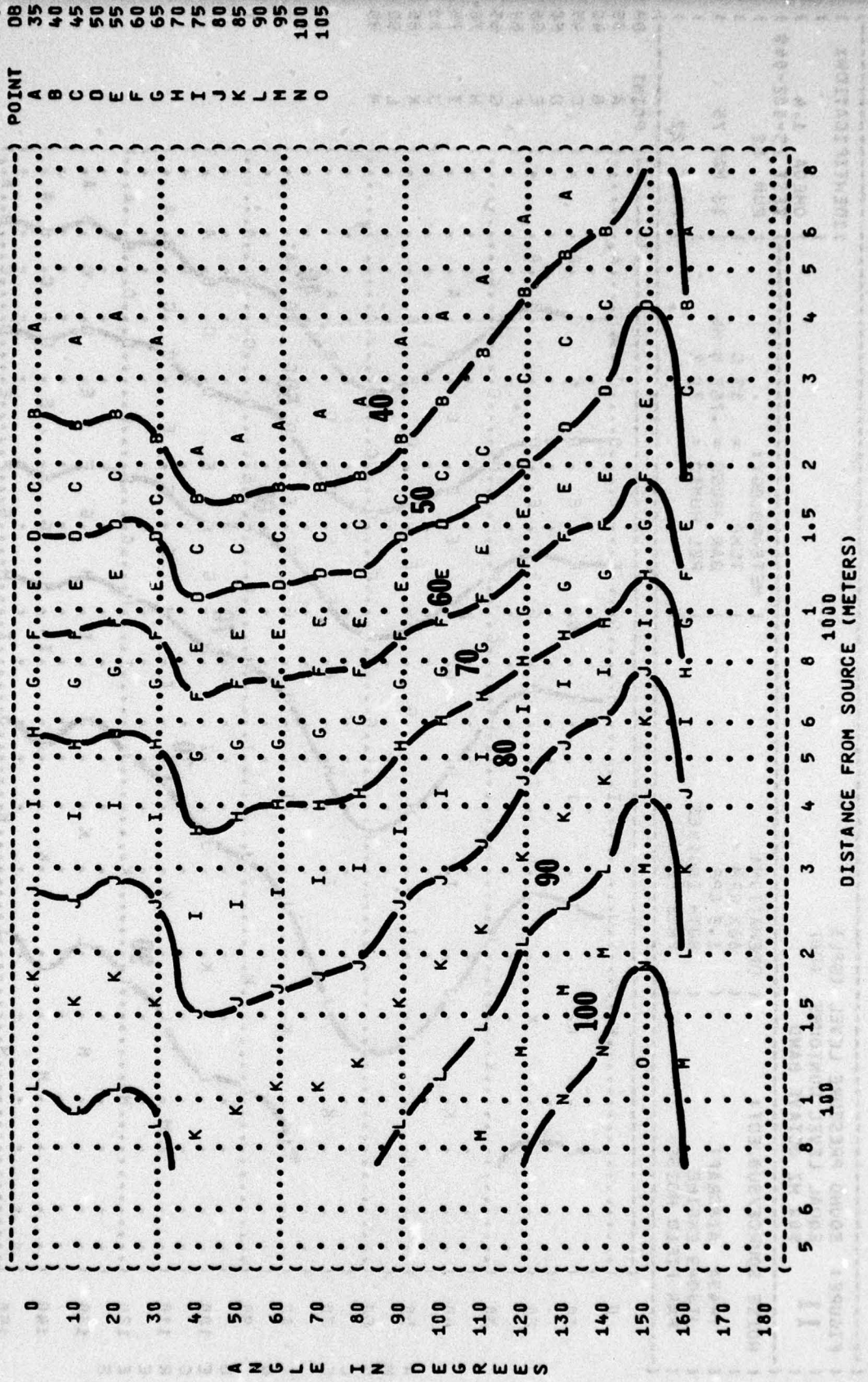
( ) FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( ) 11 EQUAL LEVEL CONTOURS (DB)  
 ( ) 63 HZ OCTAVE BAND  
 ( ) NOISE SOURCE/SUBJECT:  
 ( ) OPERATION:  
 ( ) ( 80% RPM  
 ( ) ( 1.5 EPR  
 ( ) ( BOTH ENGINES  
 ( ) ( FREE FLOW  
 ( ) T-43A AIRCRAFT  
 ( ) JT8D-9 ENGINE  
 ( ) FAR FIELD NOISE  
 ( ) METEOROLOGY:  
 ( ) TEMP = 15 C  
 ( ) BAR PRESS = .760 H HG  
 ( ) REL HUMID = 70 %  
 ( ) IDENTIFICATION:  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-049  
 ( ) RUN 02  
 ( ) 13 MAY 75  
 ( ) PAGE 19



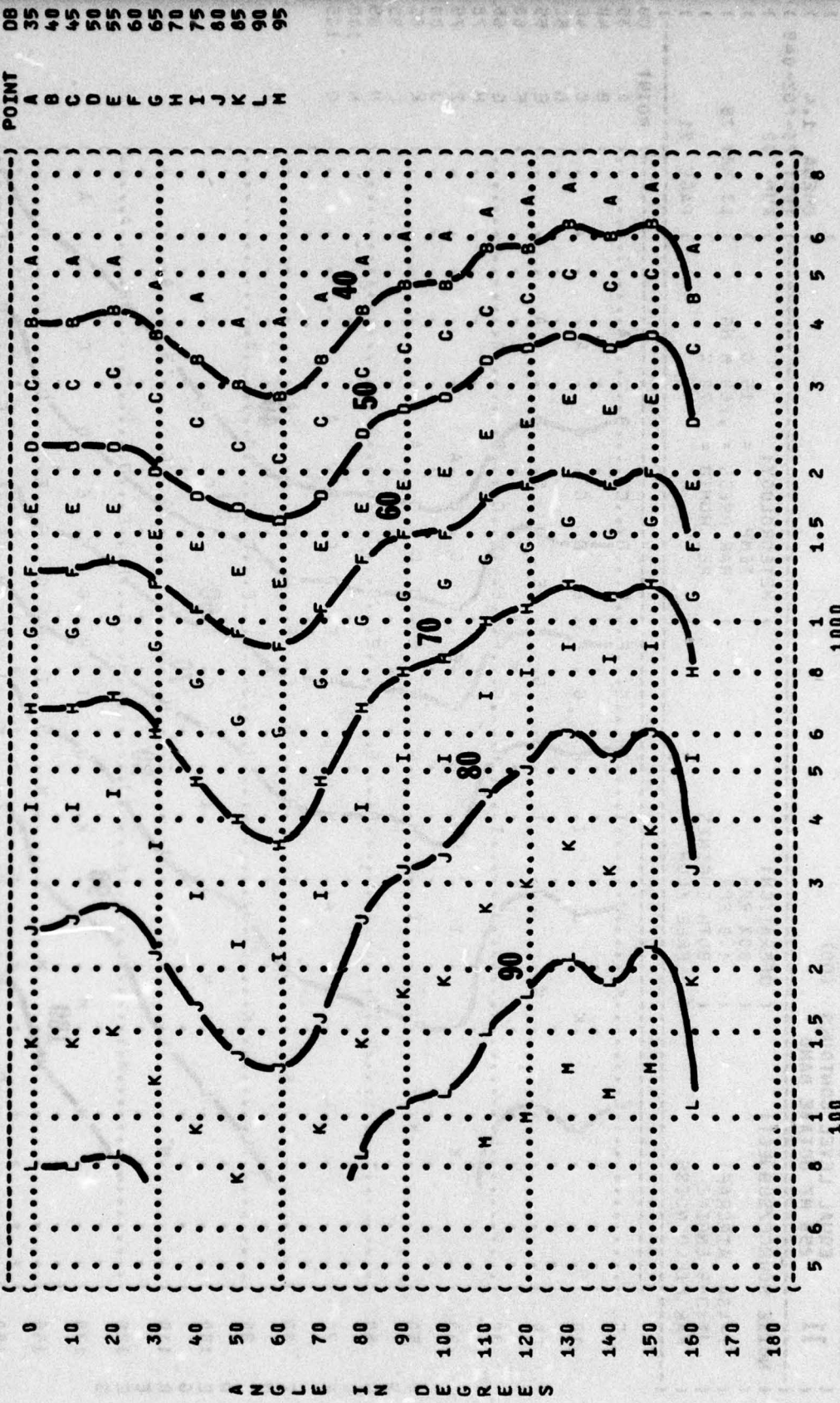




( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 250 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 80% RPM )  
 ( 1.5 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 02 )  
 ( 13 MAY 75 )  
 ( PAGE 21 )



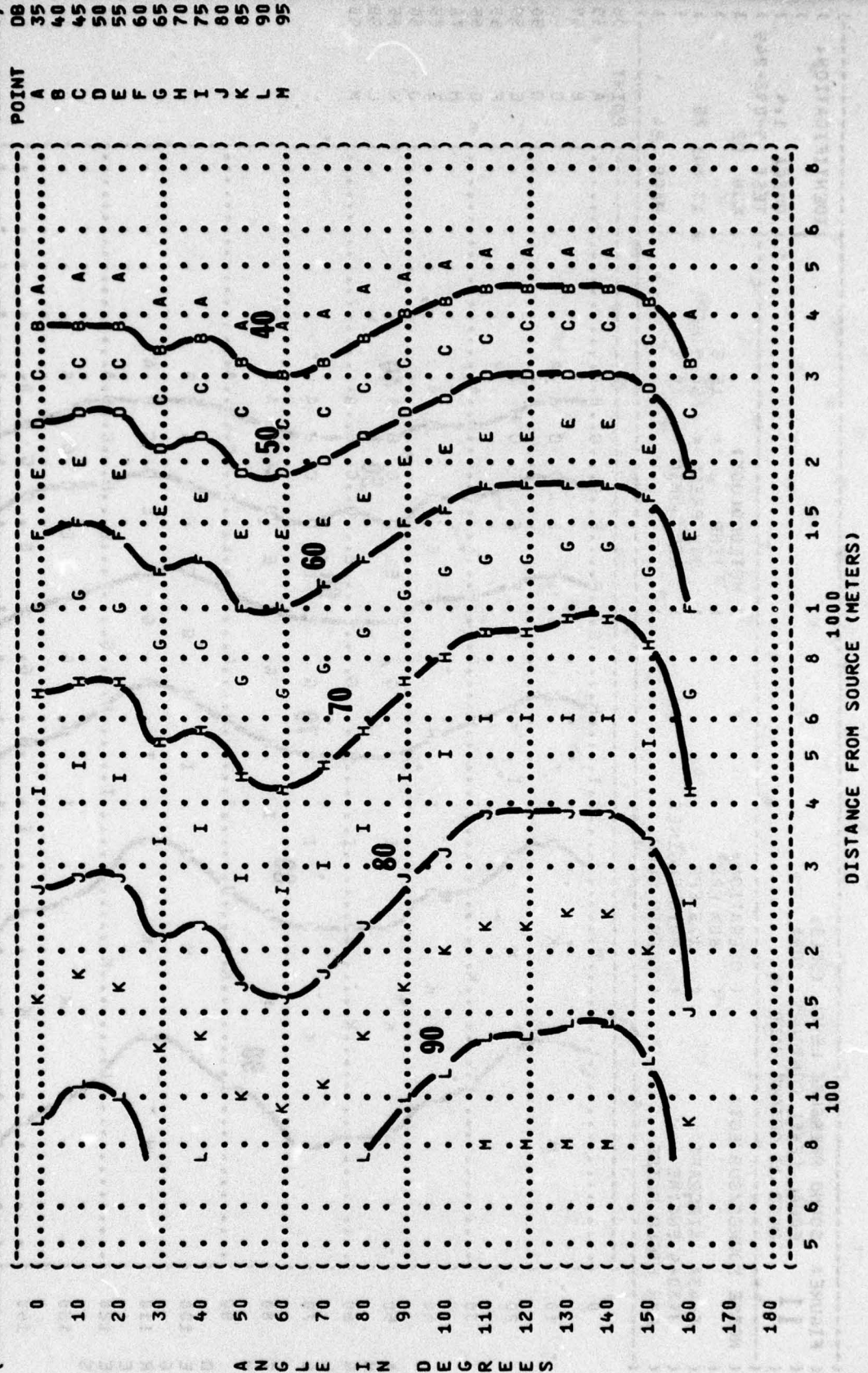
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 500 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( 80% RPM  
 ( JT8D-9 ENGINE ( 1.5 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 02  
 ( 13 MAY 75  
 ( PAGE 22



DISTANCE FROM SOURCE (METERS)



( FIGURE: SOUND PRESSURE LEVEL {SPL}  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 1000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( 80% RPM  
 ( JT80-9 ENGINE ( 1.5 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( ( PAGE 23  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 02



**FIGURE 11** SOUND PRESSURE LEVEL {SPL} EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-049  
RUN 02  
13 MAY 75  
PAGE 24

TEOROLOGY:  
TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %

( OPERATION:  
( 80% RPM  
( 1.5 EPR  
( BOTH ENGINES  
( FREE FLOW

NOISE SOURCE/SUBJECT:

T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

**PAGE 24**

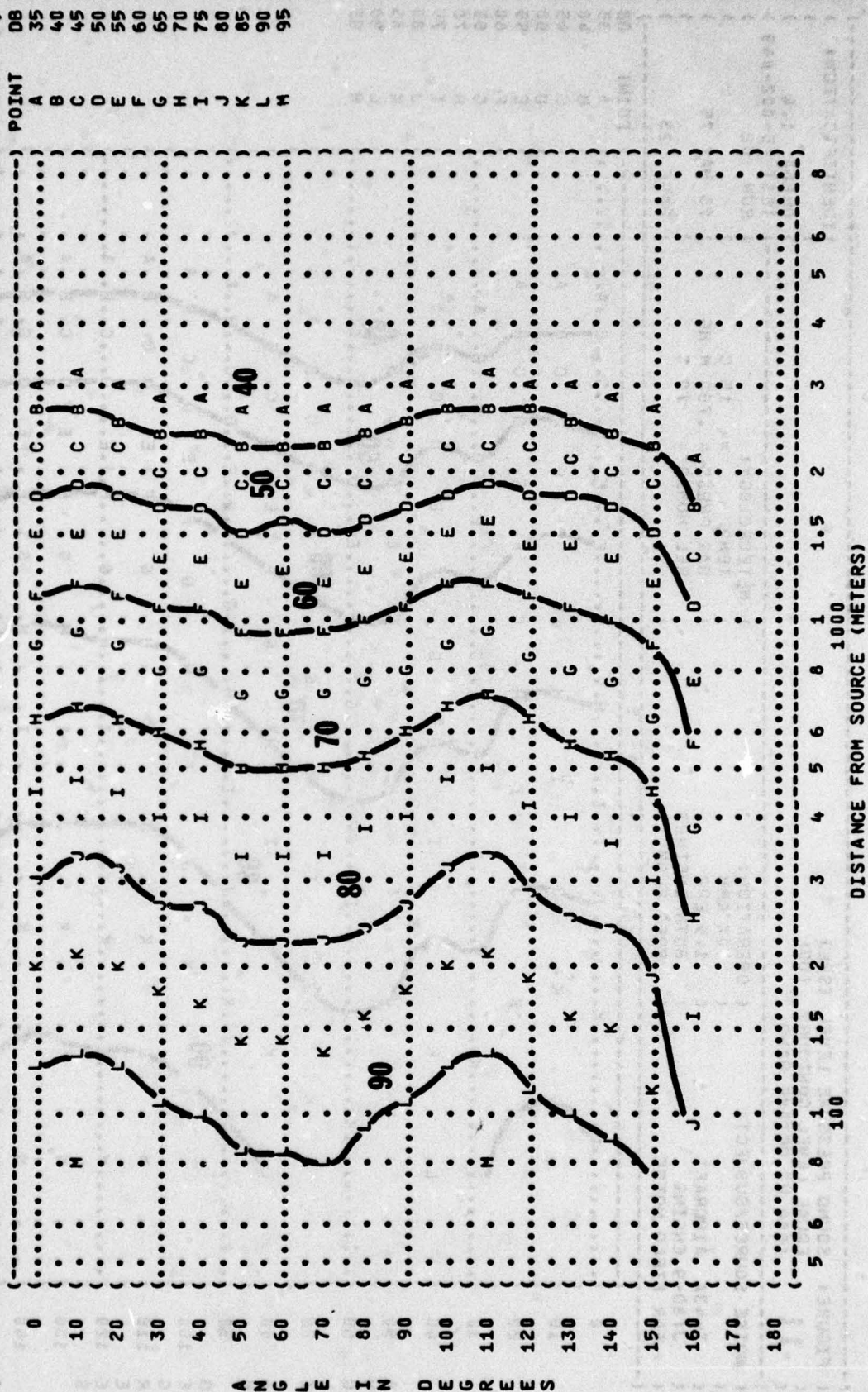


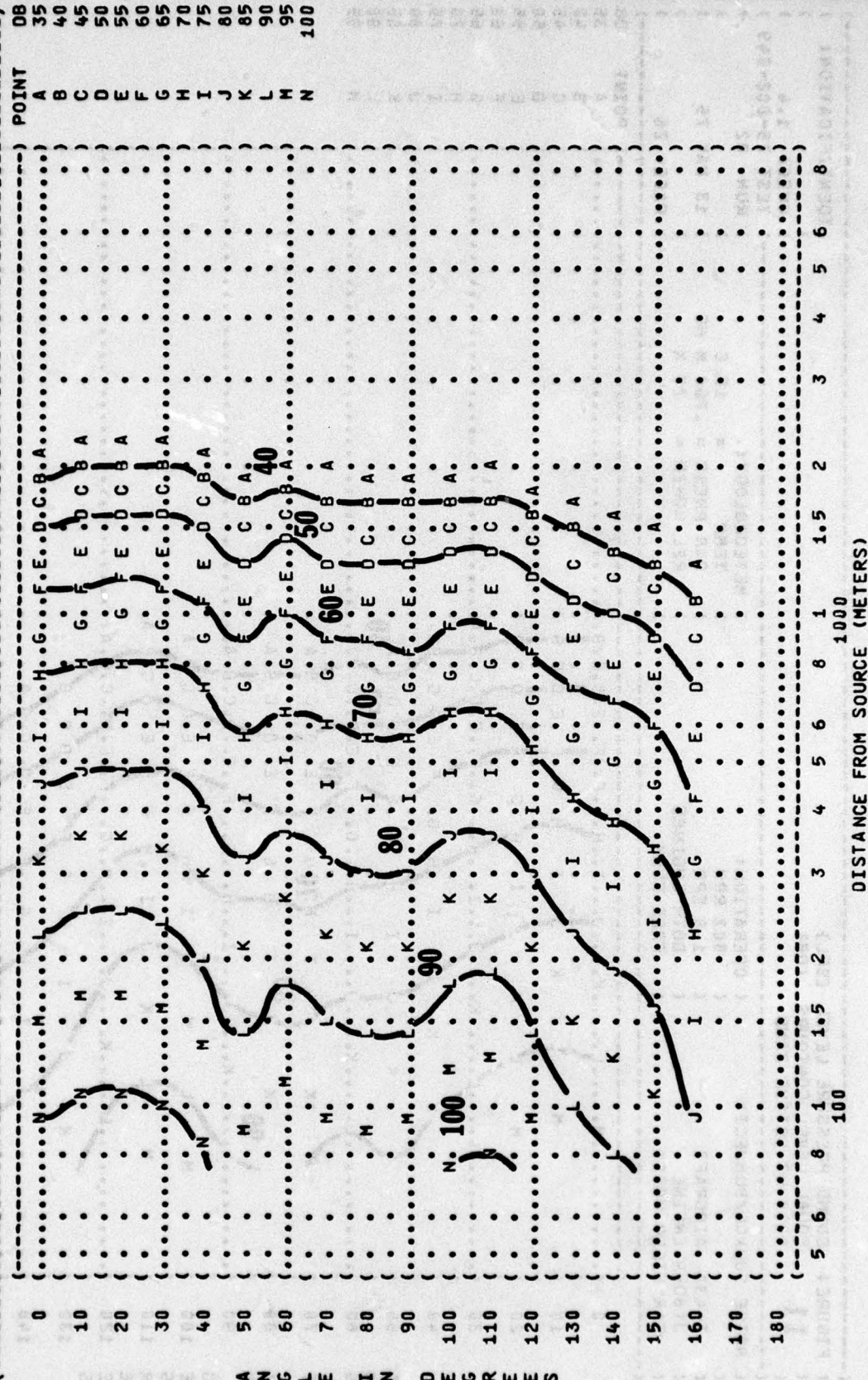


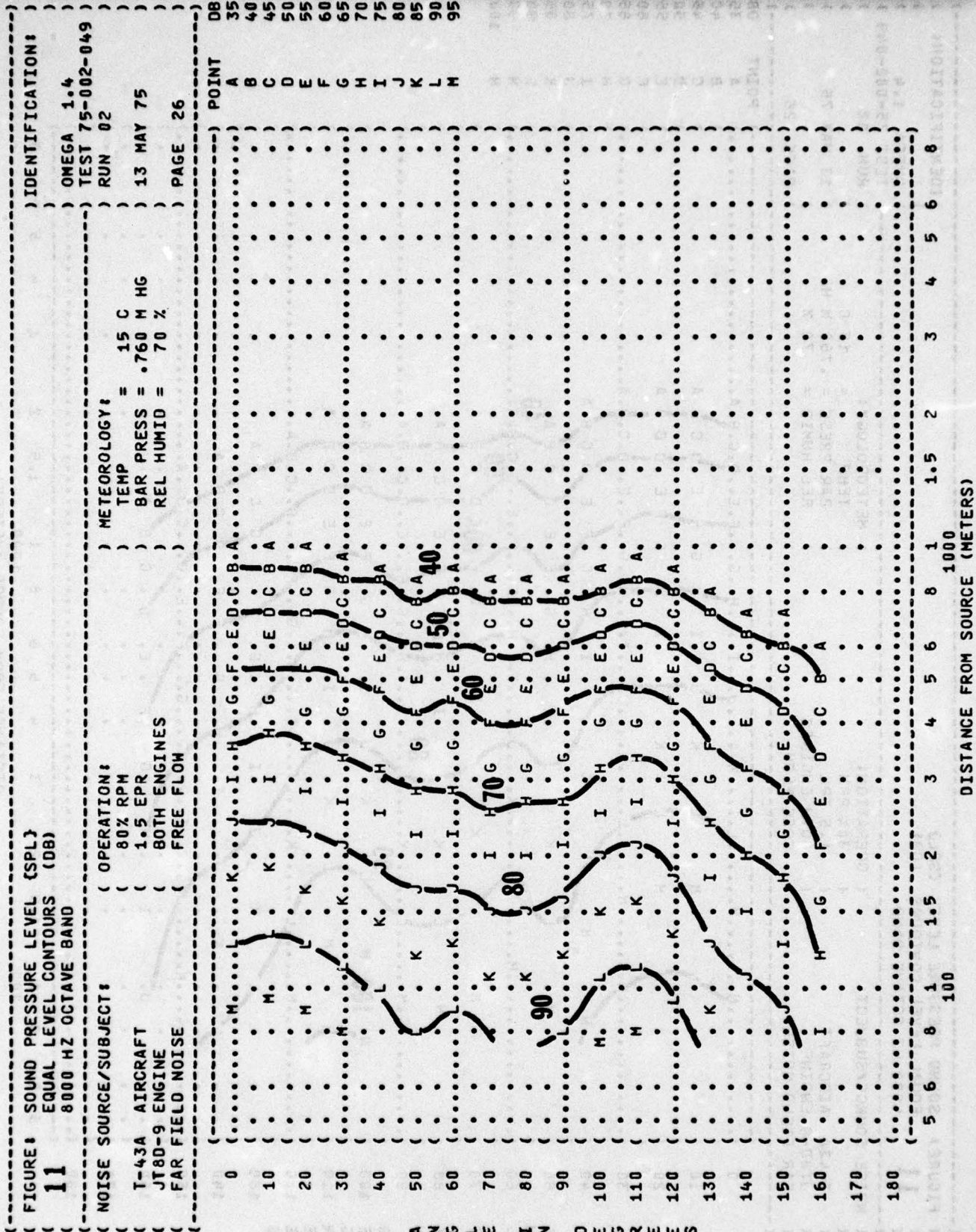
FIGURE: SOUND PRESSURE LEVEL (SPL)  
 11 EQUAL LEVEL CONTOURS (DB)  
 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: OPERATION:  
 T-43A AIRCRAFT 80% RPM  
 JT80-9 ENGINE 1.5 EPR  
 FAR FIELD NOISE BOTH ENGINES  
 FREE FLOW

METEOROLOGY:  
 TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %

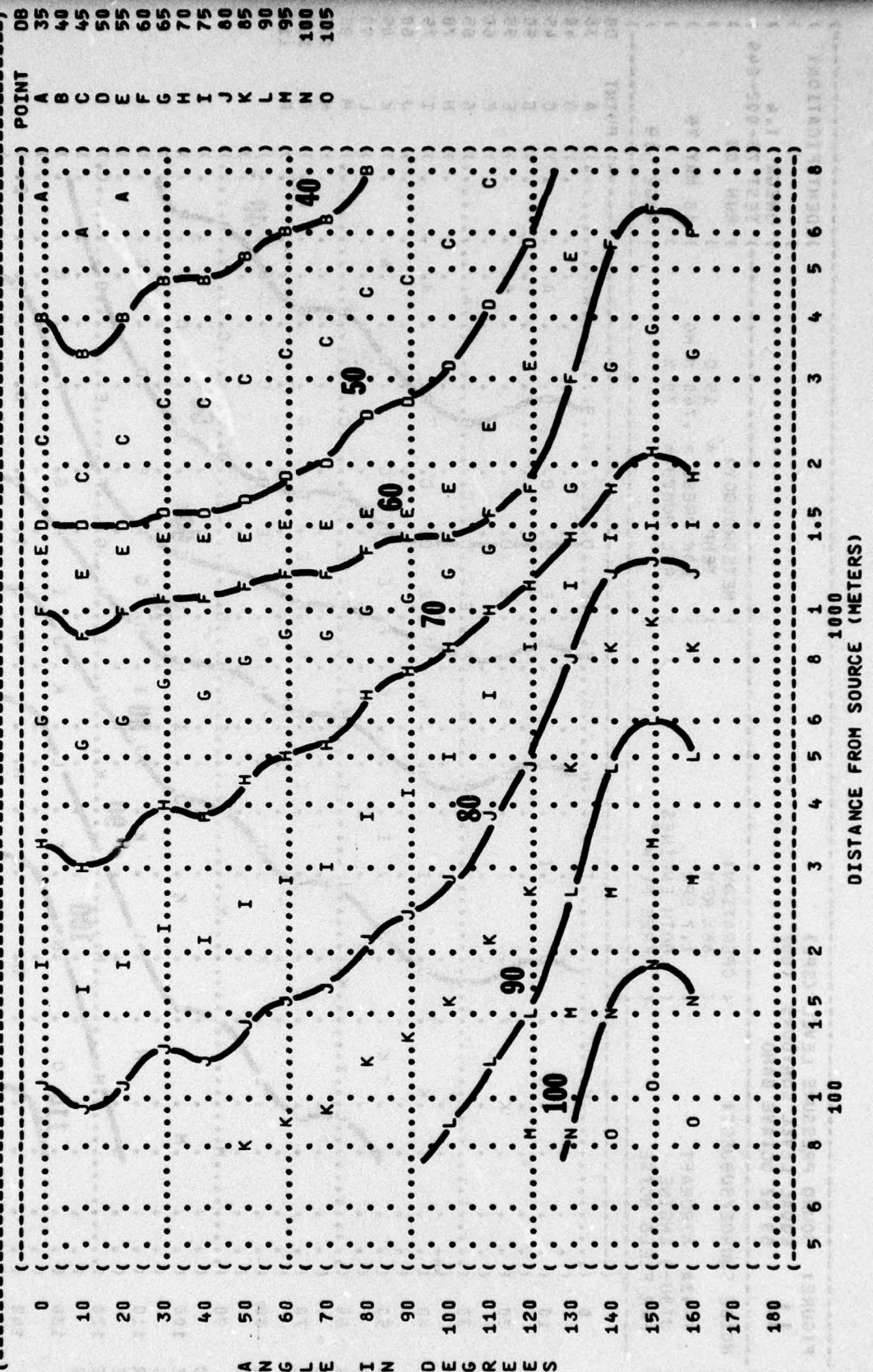
IDENTIFICATION:  
 OMEGA 1.4  
 TEST 75-002-049  
 RUN 02  
 13 MAY 75  
 PAGE 25



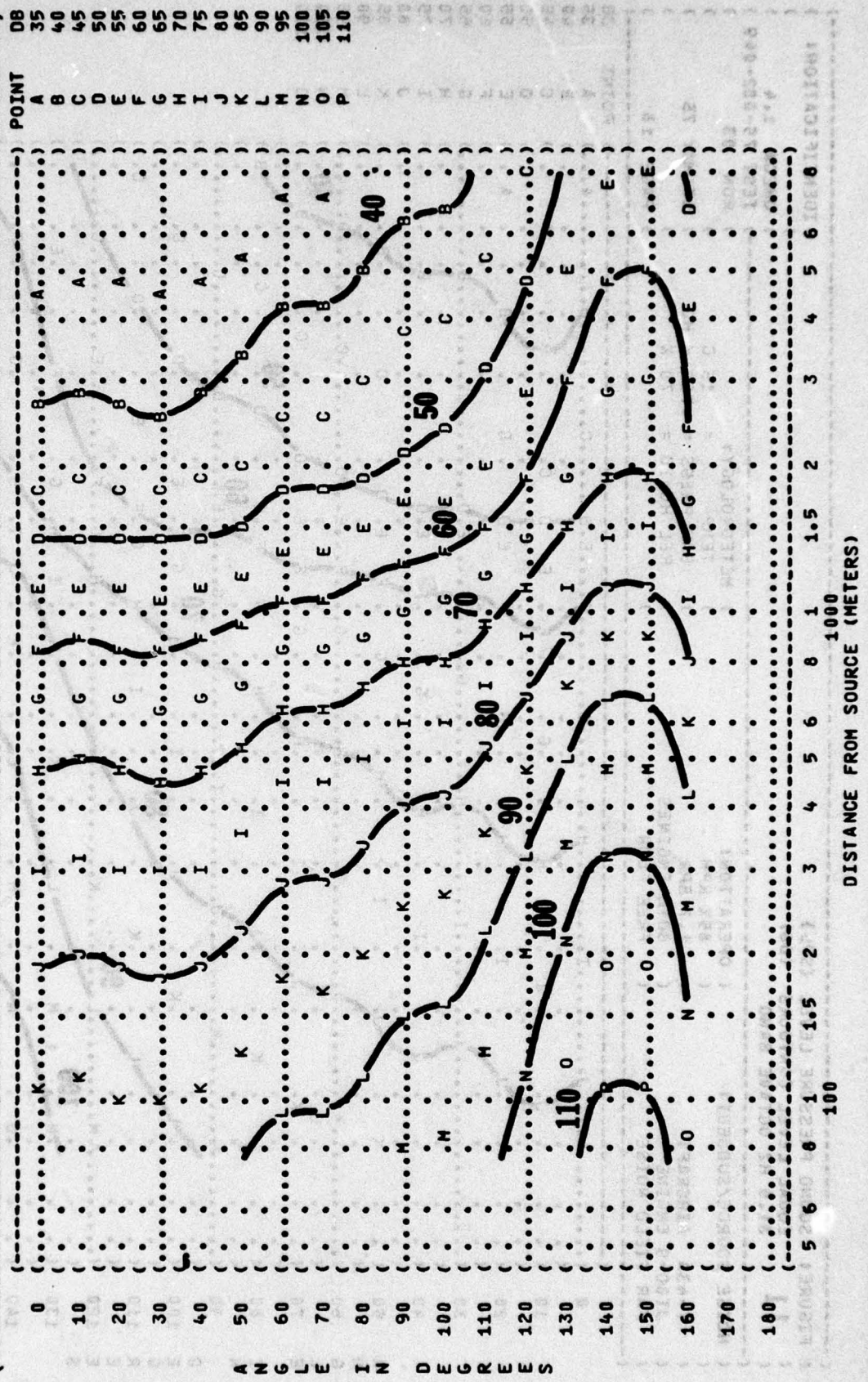




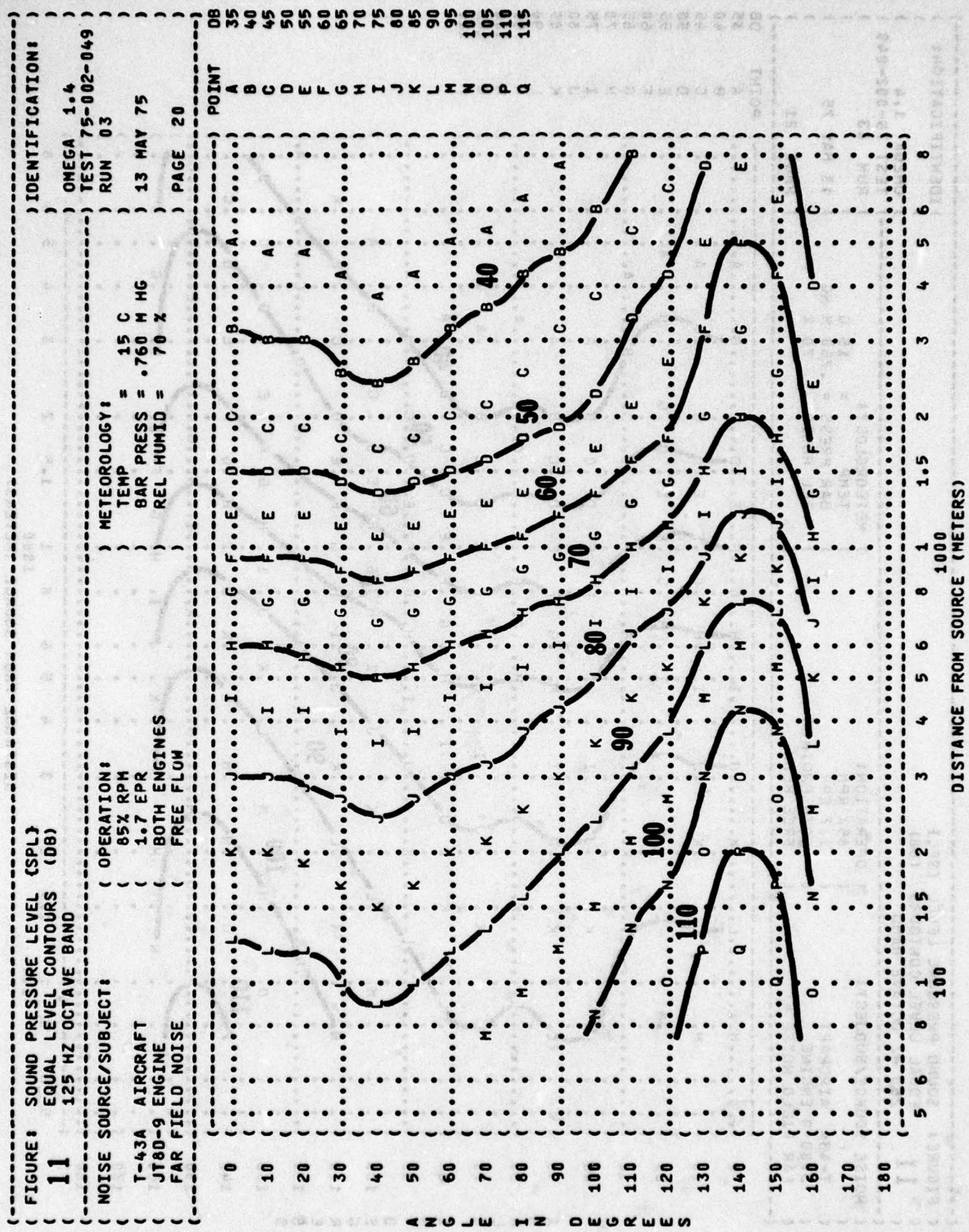
( FIGURE: SOUND PRESSURE LEVEL {SPL}  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 31.5 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( 85% RPM  
 ( JT8D-9 ENGINE ( 1.7 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( 13 MAY 75  
 ( PAGE 18  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 03



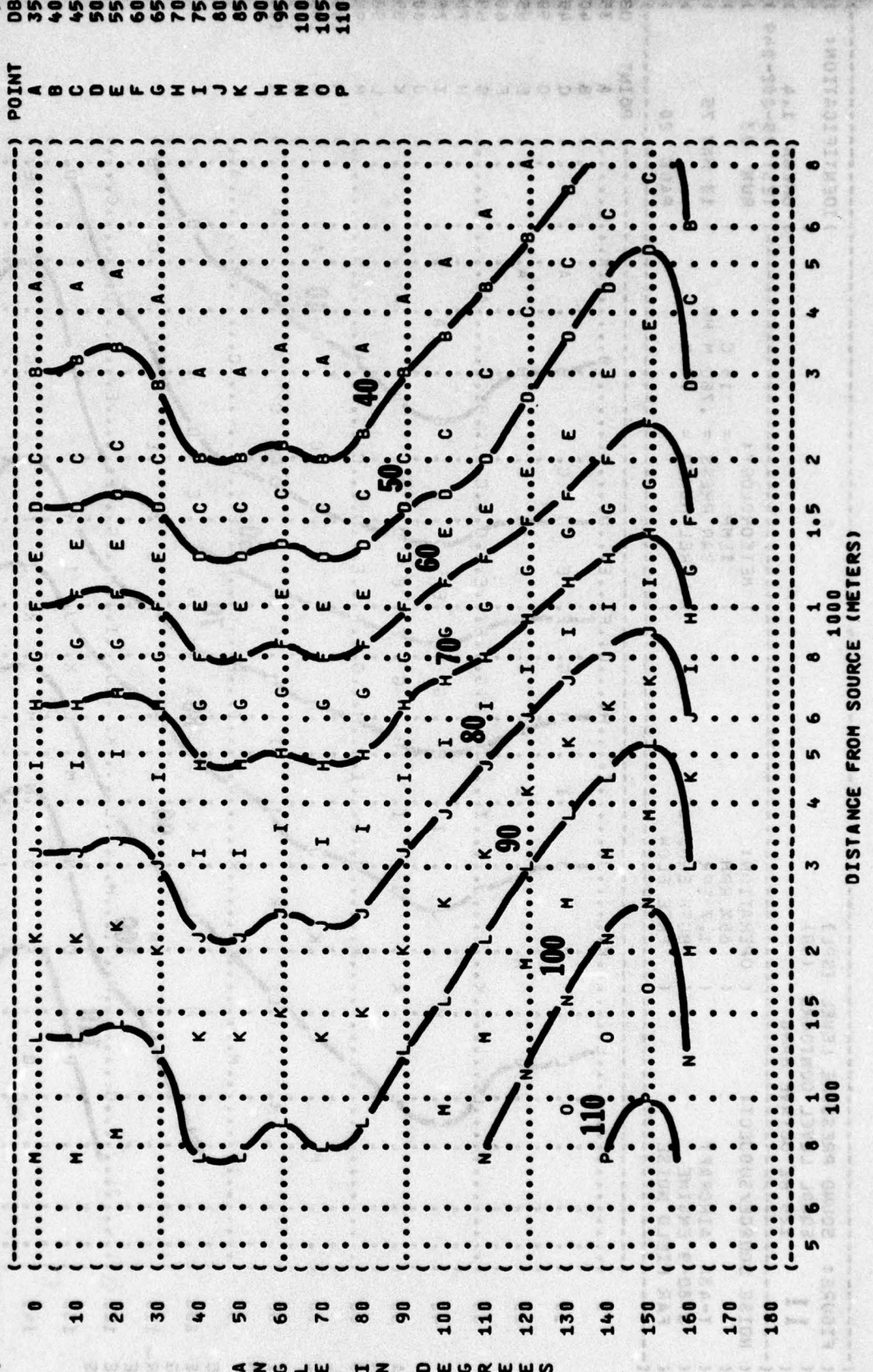
( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 63 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 85% RPM )  
 ( 1.7 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 03 )  
 ( 13 MAY 75 )  
 ( PAGE 19 )







( FIGURE: SOUND PRESSURE LF'EL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 250 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( 85% RPM  
 ( JT6D-9 ENGINE ( 1.7 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 03  
 ( 13 MAY 75  
 ( PAGE 21





( FIGURE: SOUND PRESSURE LEVEL (SPL)  
( EQUAL LEVEL CONTOURS (DB)  
( 11  
( 500 HZ OCTAVE BAND )  
( NOISE SOURCE/SUBJECT: )  
( OPERATION: ) METEOROLOGY:  
( 85% RPM ) TEMP = 15 C  
( 1.7 EPR ) BAR PRESS = .760 M HG  
( BOTH ENGINES ) REL HUMID = 70 %  
( FREE FLOW ) )  
( Y-43A AIRCRAFT )  
( JT8D-9 ENGINE )  
( FAR FIELD NOISE )

) IDENTIFICATION:  
) OMEGA 1.4  
) TEST 75-002-049  
) RUN 03  
) 13 MAY 75  
) PAGE 22

## 1) METEOROLOGY:

TEMP = 15 C

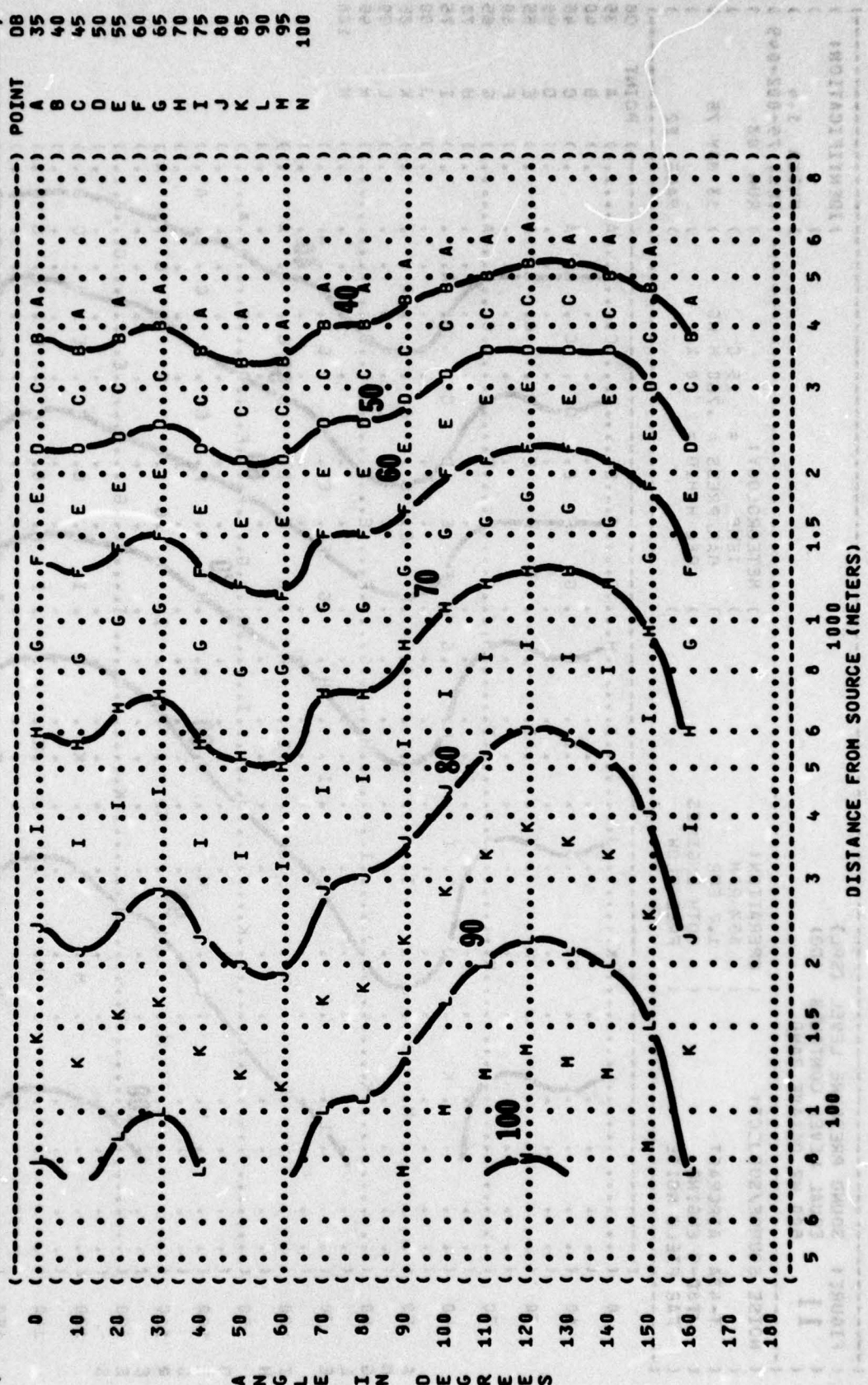
**BAR PRESS = .760 M HG**

## BOTH ENGINES

**FREE FLOW**

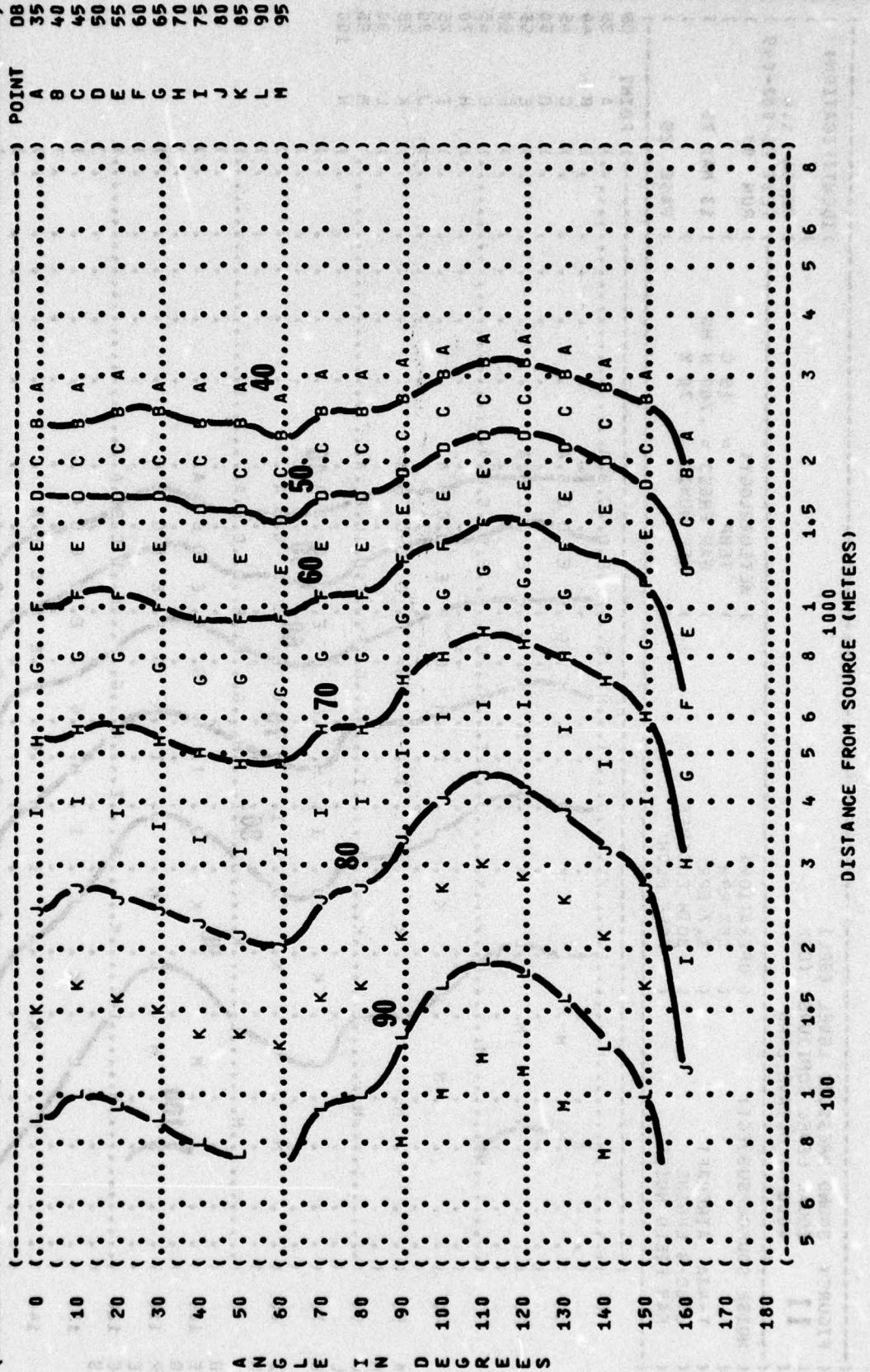


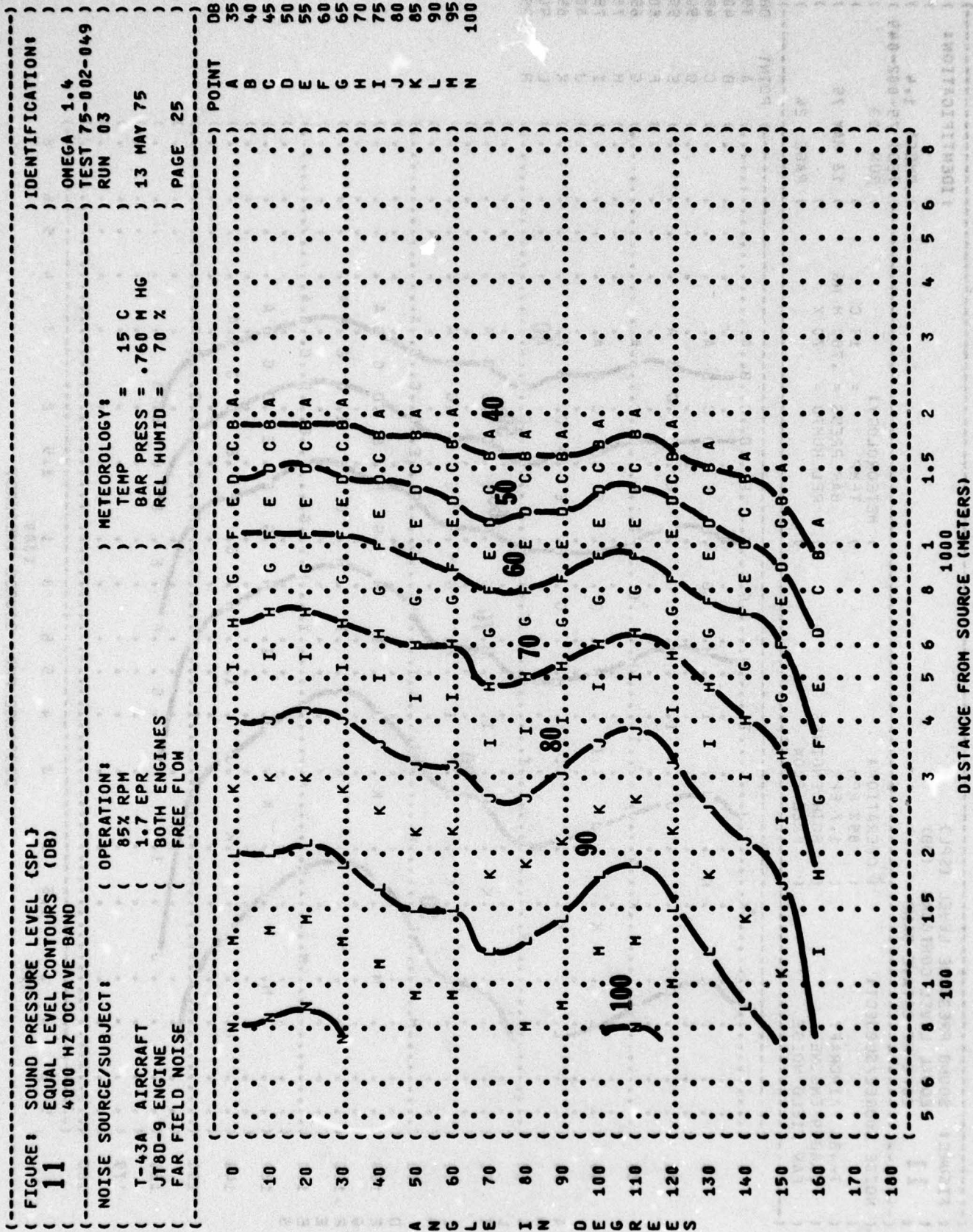
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 1000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT:  
 ( ( OPERATION:  
 ( ( 85% RPM  
 ( ( 1.7 EPR  
 ( ( BOTH ENGINES  
 ( ( FREE FLOW  
 ( T-43A AIRCRAFT  
 ( JT8D-9 ENGINE  
 ( FAR FIELD NOISE  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( RUN 03  
 ( 13 MAY 75  
 ( PAGE 23  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 (





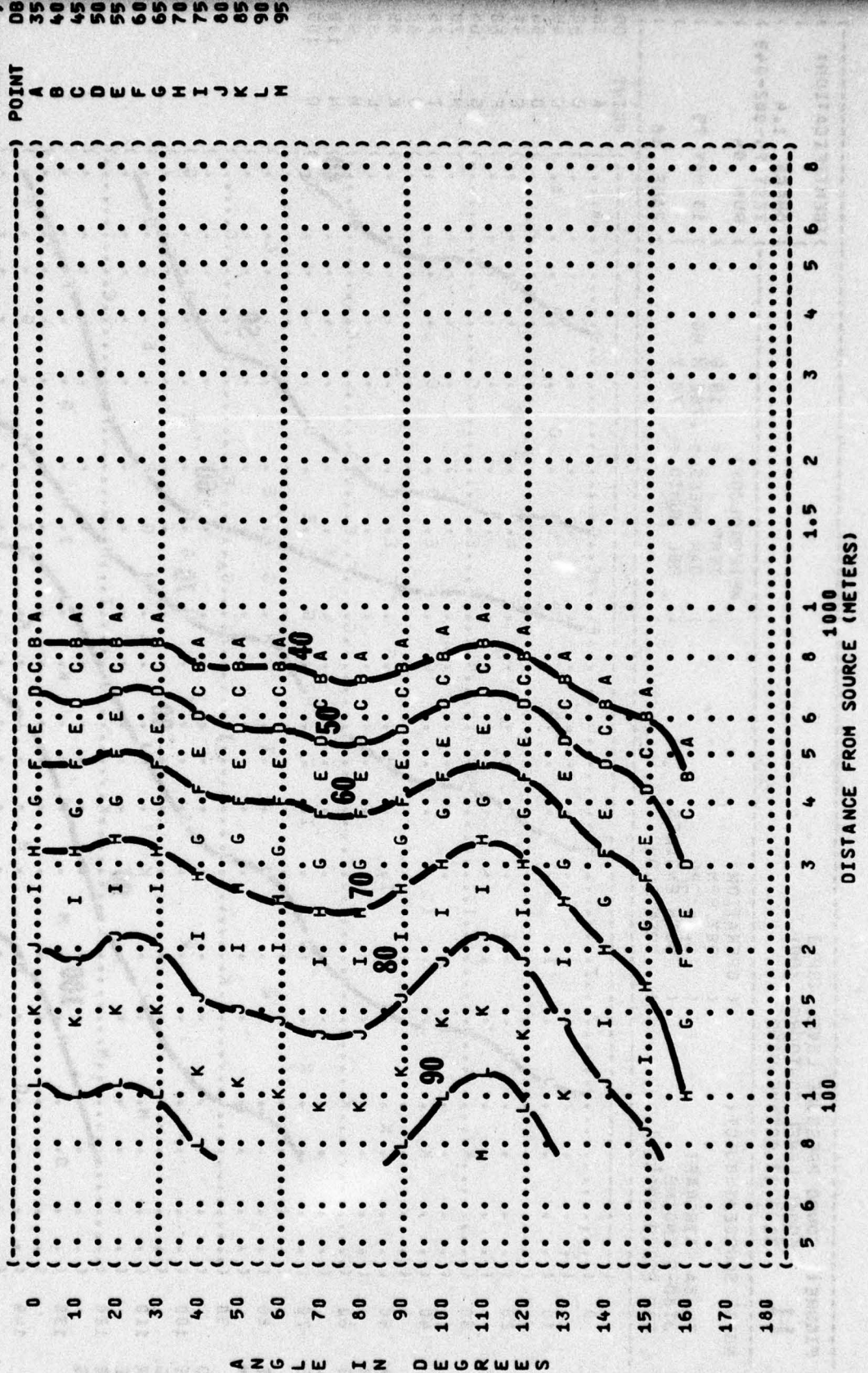
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 2000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( 85% RPM  
 ( JT80-9 ENGINE ( 1.7 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 03  
 ( 13 MAY 75  
 ( PAGE 24







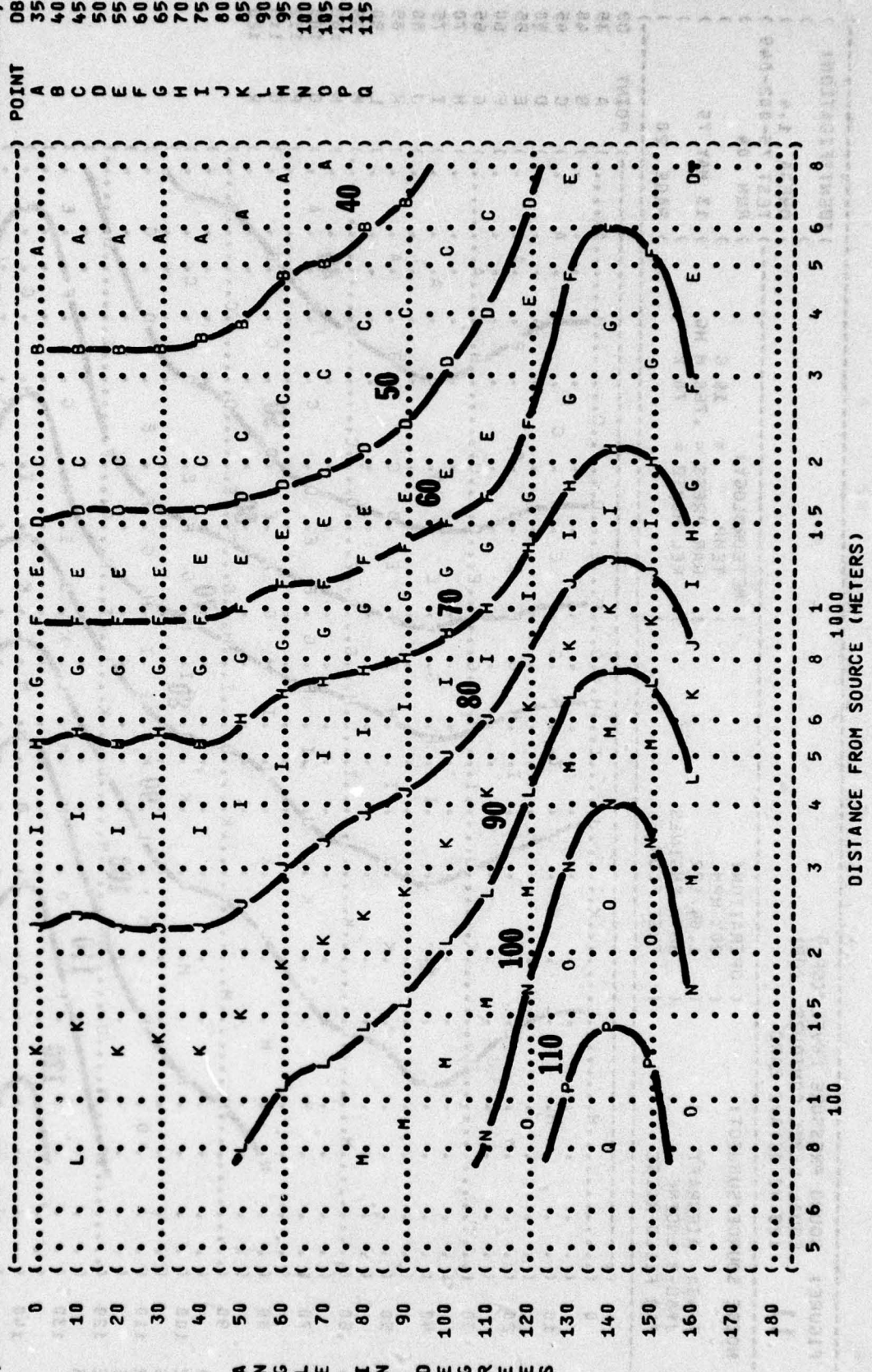
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 8000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT:  
 ( T-43A AIRCRAFT  
 ( JT8D-9 ENGINE  
 ( FAR FIELD NOISE  
 ( OPERATION:  
 ( 85% RPM  
 ( 1.7 EPR  
 ( BOTH ENGINES  
 ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 03  
 ( 13 MAY 75  
 ( PAGE 26





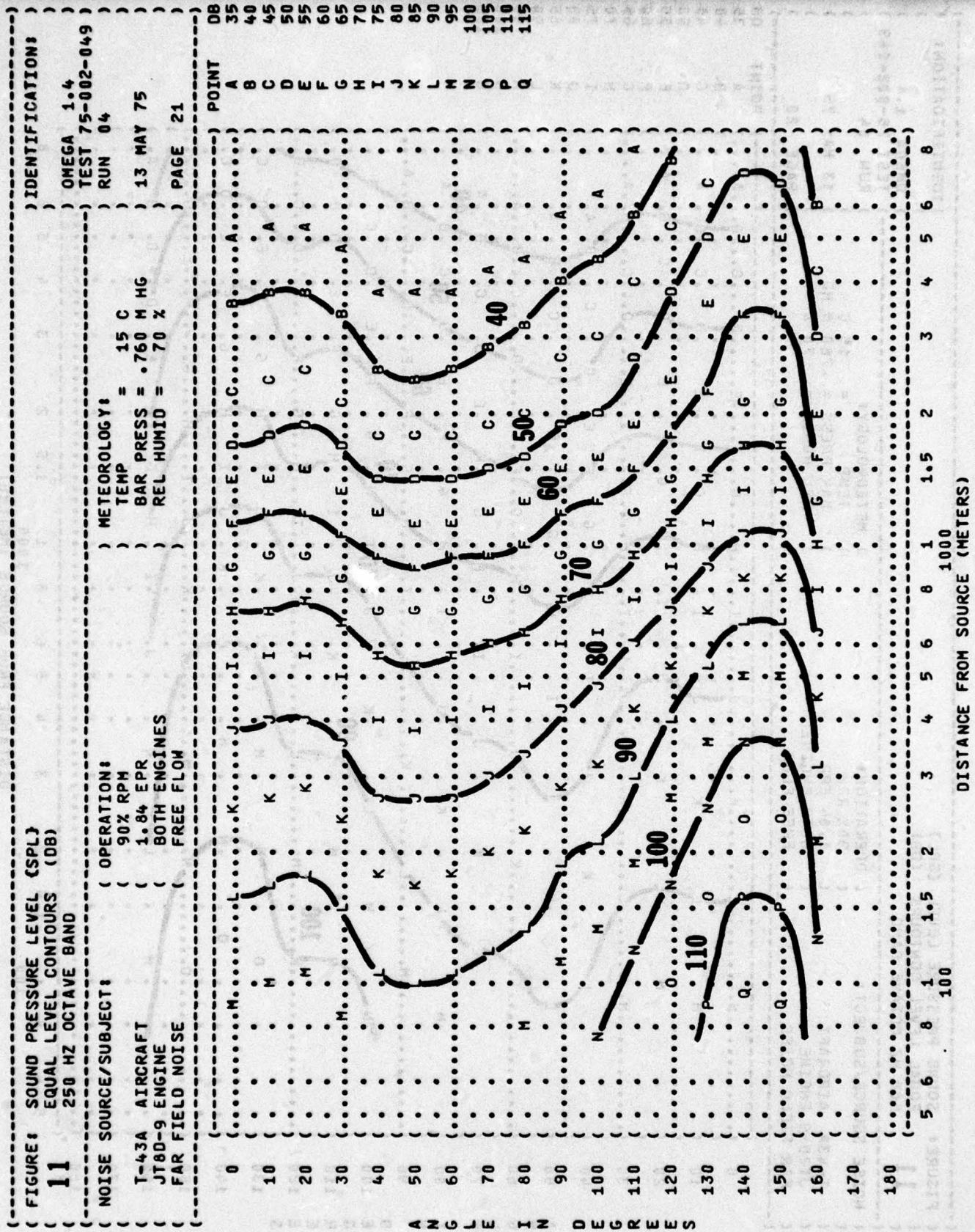


( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 63 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT80-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 90% RPM )  
 ( 1.84 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 04 )  
 ( 13 MAY 75 )  
 ( PAGE 19 )

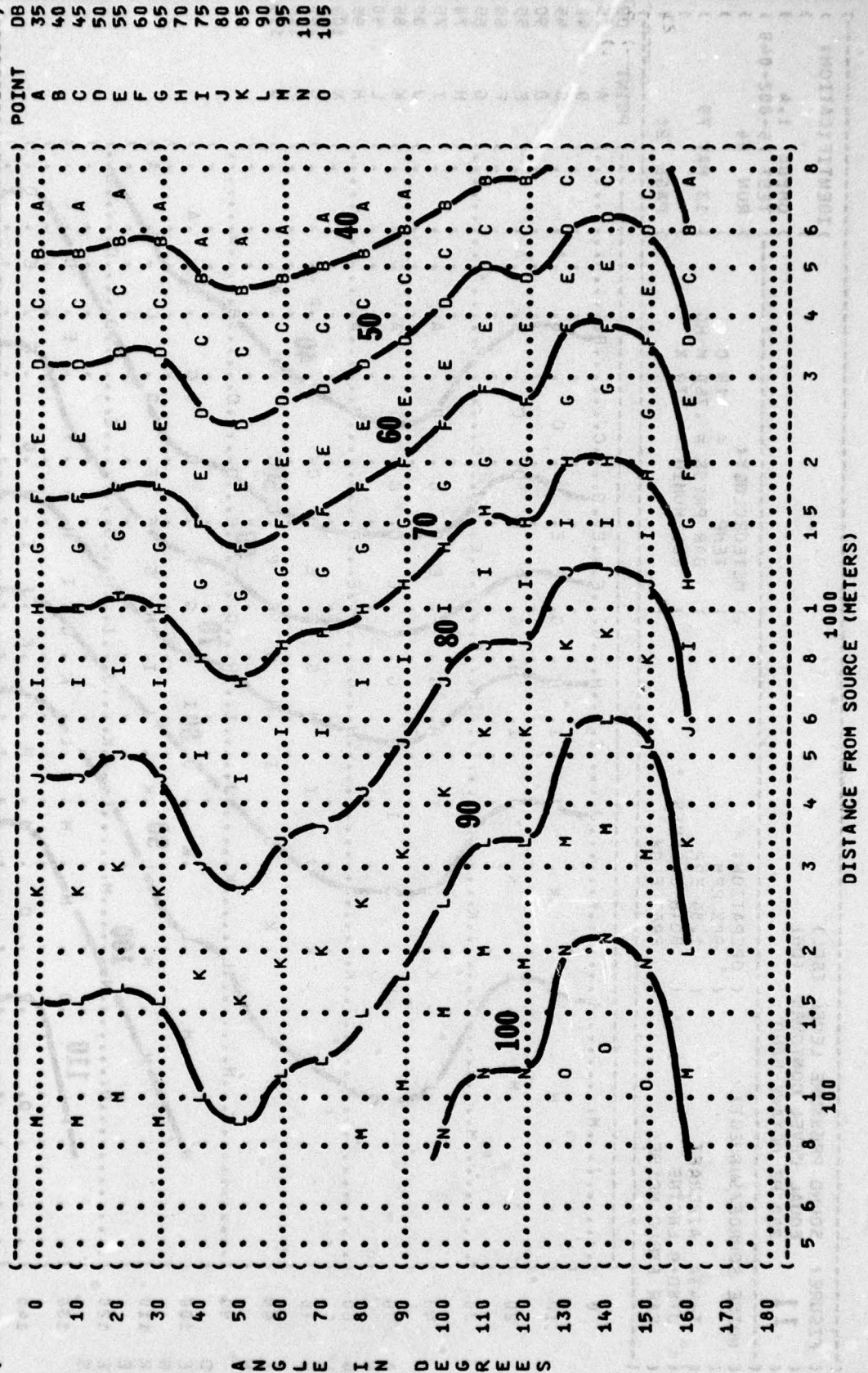






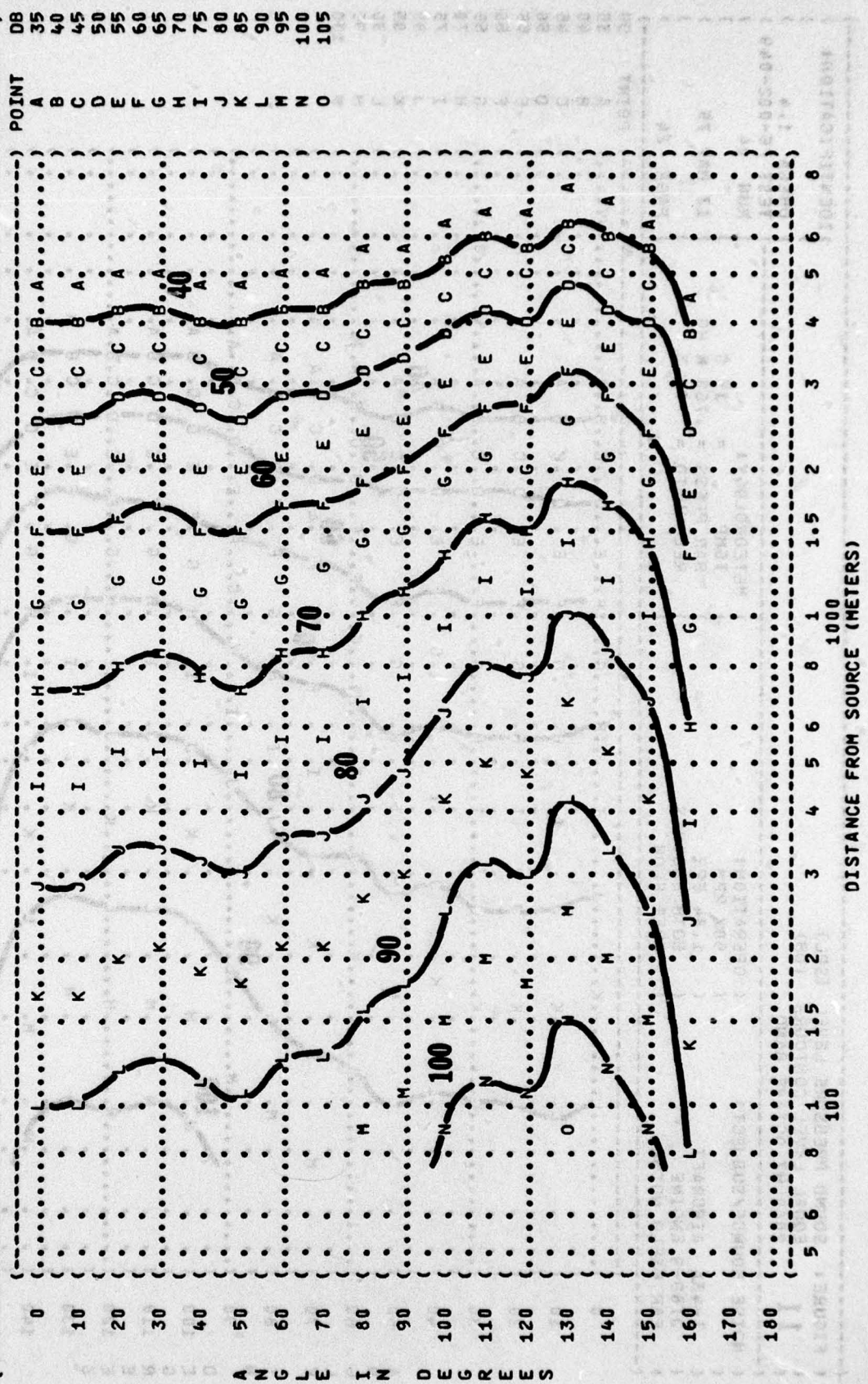


( FIGURE: SOUND PRESSURE LEVEL {SPL} )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 500 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( T-43A AIRCRAFT )  
 ( JT80-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( OPERATION: )  
 ( 90% RPM )  
 ( 1.84 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 04 )  
 ( 13 MAY 75 )  
 ( PAGE 22 )





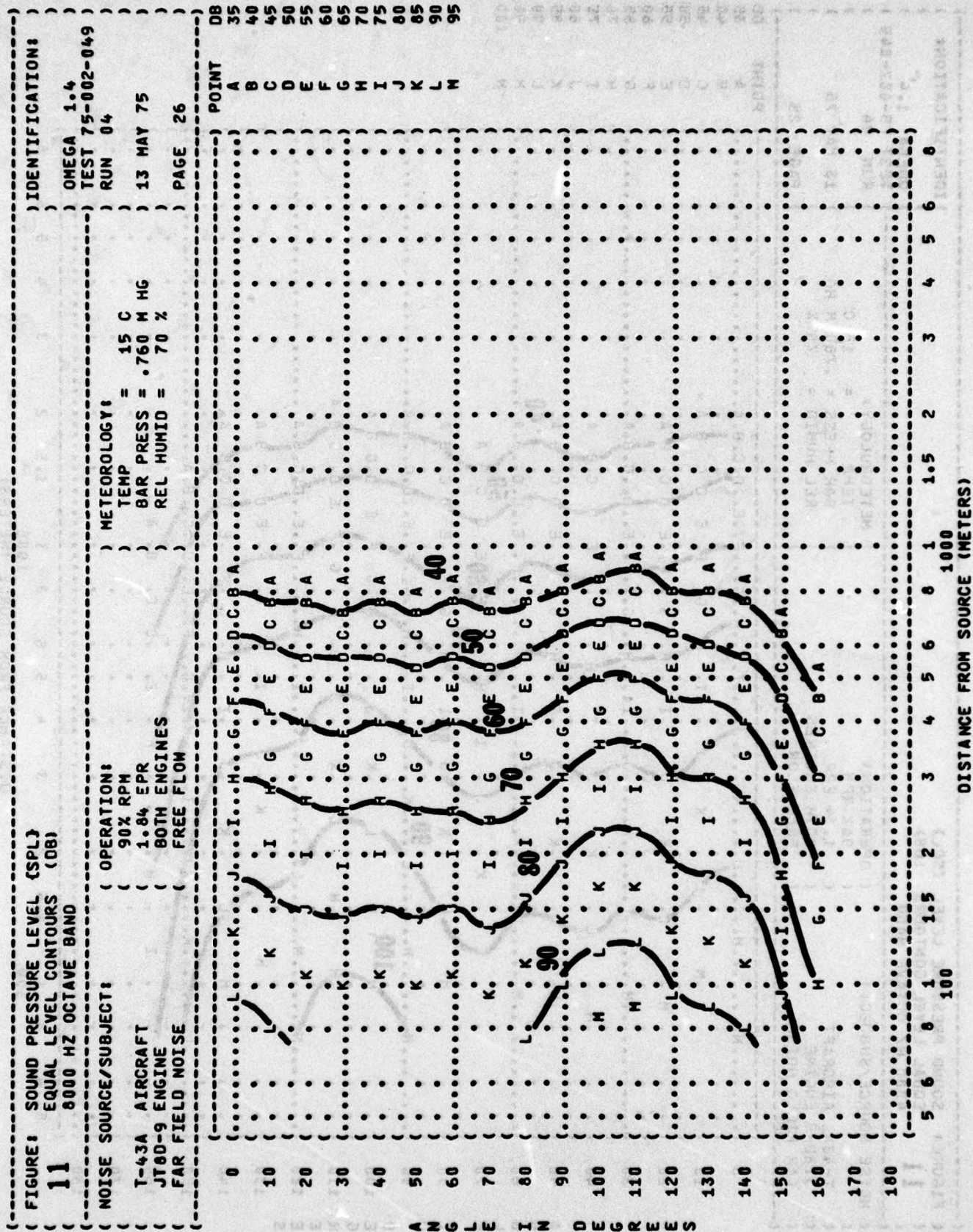
( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 1000 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( OPERATION: )  
 ( 90% RPM )  
 ( 1.84 EPR )  
 ( BOTH ENGINES )  
 ( FREE FLOW )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 04 )  
 ( 13 MAY 75 )  
 ( PAGE 23 )





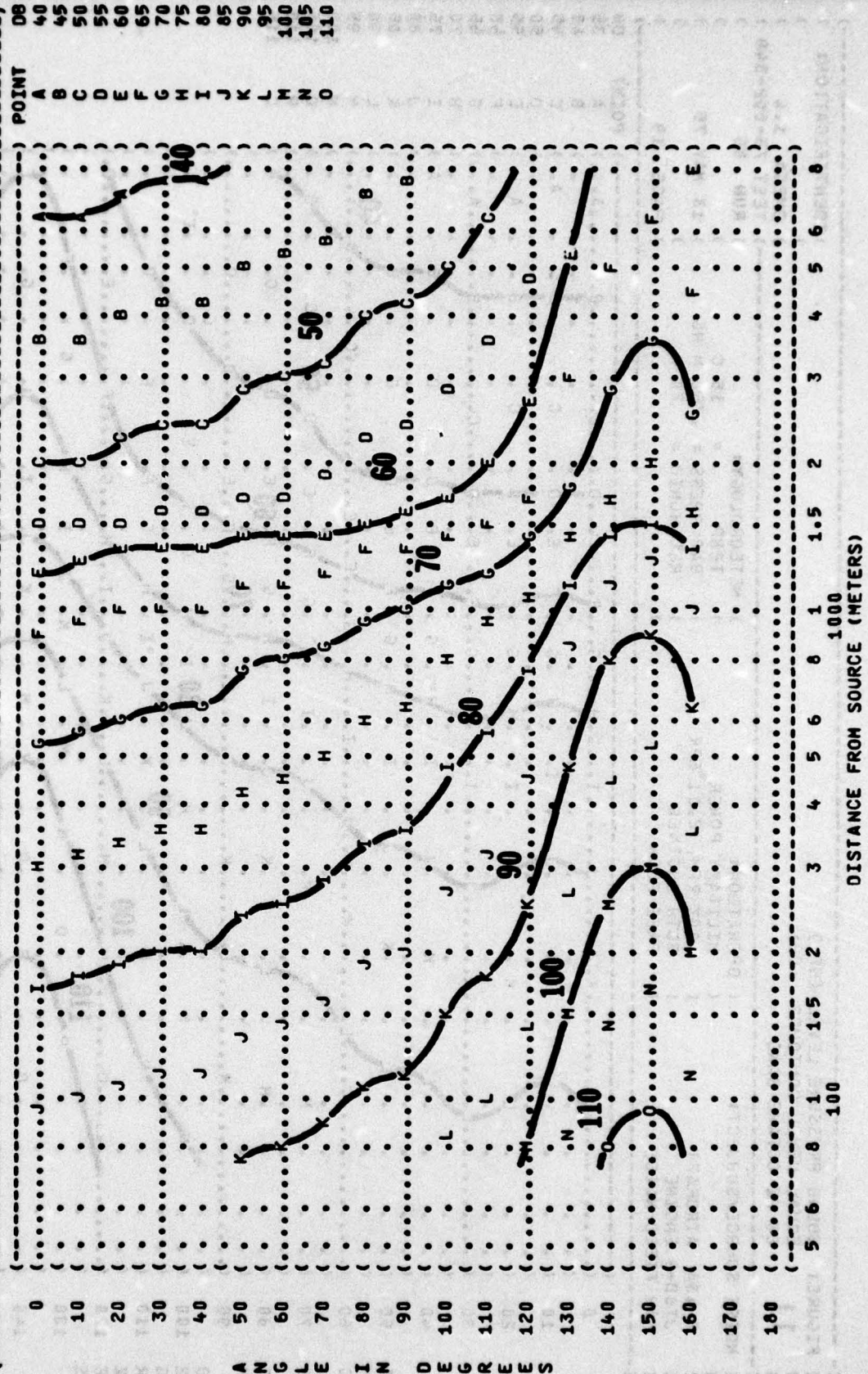








( ) IDENTIFICATION: ( )  
 ( )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-049  
 ( ) RUN 05  
 ( )  
 ( ) METEOROLOGY: ( )  
 ( ) TEMP = 15 C  
 ( ) BAR PRESS = .760 H HG  
 ( ) REL HUMID = 70 %  
 ( )  
 ( ) OPERATION: ( )  
 ( ) MILITARY POWER  
 ( ) 100% RPM, 2.01 EPR  
 ( ) BOTH ENGINES  
 ( ) FREE FLOW  
 ( )  
 ( ) NOISE SOURCE/SUBJECT: ( )  
 ( ) T-43A AIRCRAFT  
 ( ) JT80-9 ENGINE  
 ( ) FAR FIELD NOISE  
 ( ) PAGE 10



IDENTIFICATION: )  
OMEGA 1.4 )

**63 HZ OCTAVE BAND**

# METEOROLOGY:

**RUN 05**

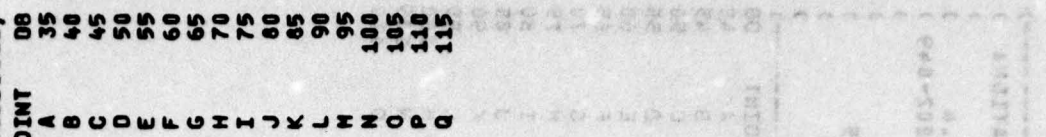
TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

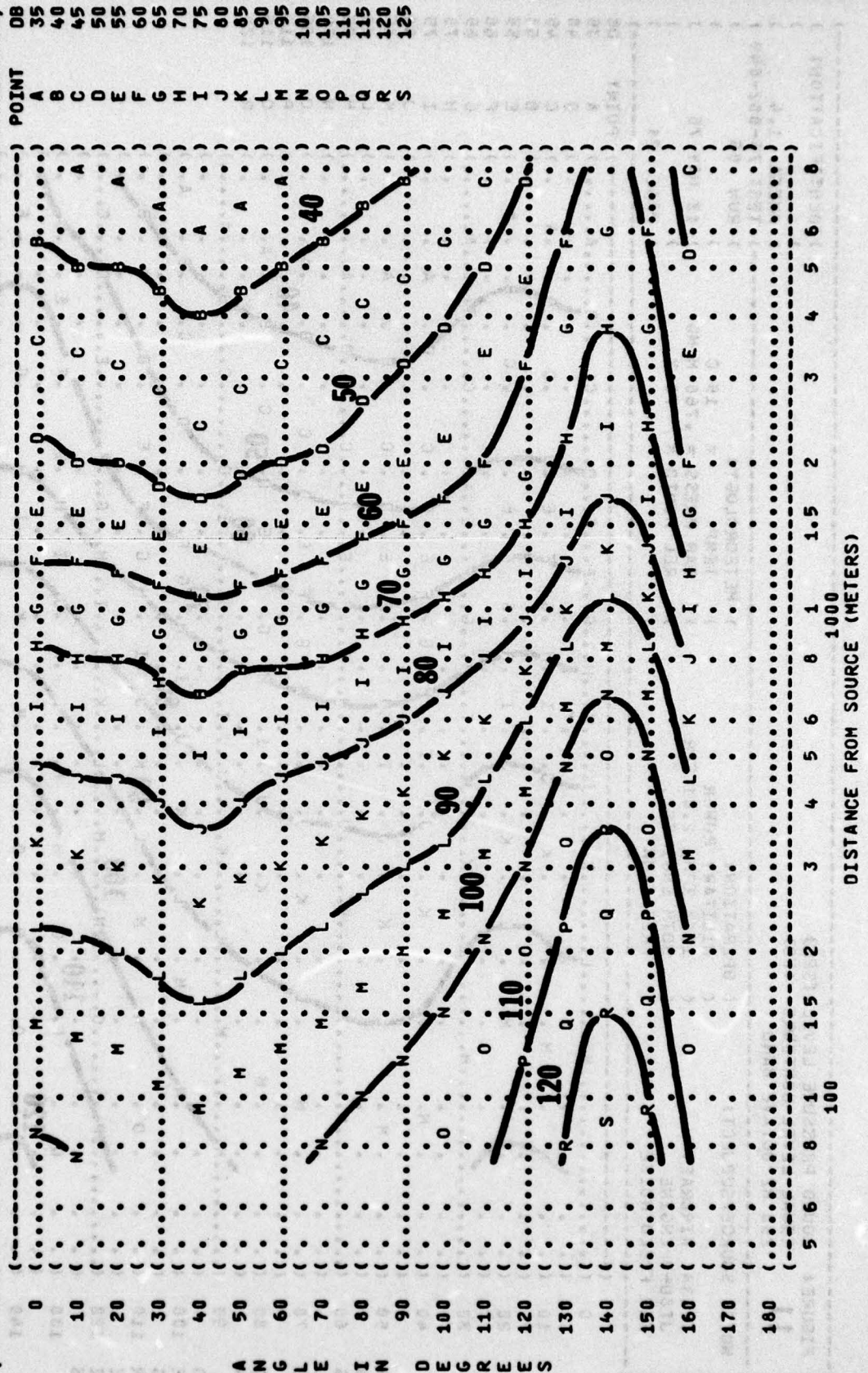
PAGE 19

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( ( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( ( 125 HZ OCTAVE BAND  
 ( ( NOISE SOURCE/SUBJECT:  
 ( ( ( OPERATION:  
 ( ( ( MILITARY POWER  
 ( ( ( 100% RPM, 2.01 EPR  
 ( ( ( BOTH ENGINES  
 ( ( ( FREE FLOW  
 ( ( T-43A AIRCRAFT  
 ( ( JT80-9 ENGINE  
 ( ( FAR FIELD NOISE  
 ( ( METEOROLOGY:  
 ( ( TEMP = 15 C  
 ( ( BAR PRESS = .760 M HG  
 ( ( REL HUMID = 70 %  
 ( ( IDENTIFICATION:  
 ( ( OMEGA 1.4  
 ( ( TEST 75-002-049  
 ( ( RUN 05  
 ( ( 13 MAY 75  
 ( ( PAGE 20







**11**  
**EQUAL LEVEL CONTOURS (OB)**  
**500 HZ OCTAVE BAND**

11

**500 HZ OCTAVE BAND**

**NOISE SOURCE/SUBJECT:**

## OPERATIONS

T-43A AIRCRAFT  
JT8D-9 ENGINE  
FAR FIELD NOISE

**MILITARY POWER  
100% RPM, 2.01 EPR  
BOTH ENGINES  
FREE FLOW**

## 1) METEOROLOGY:

TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %

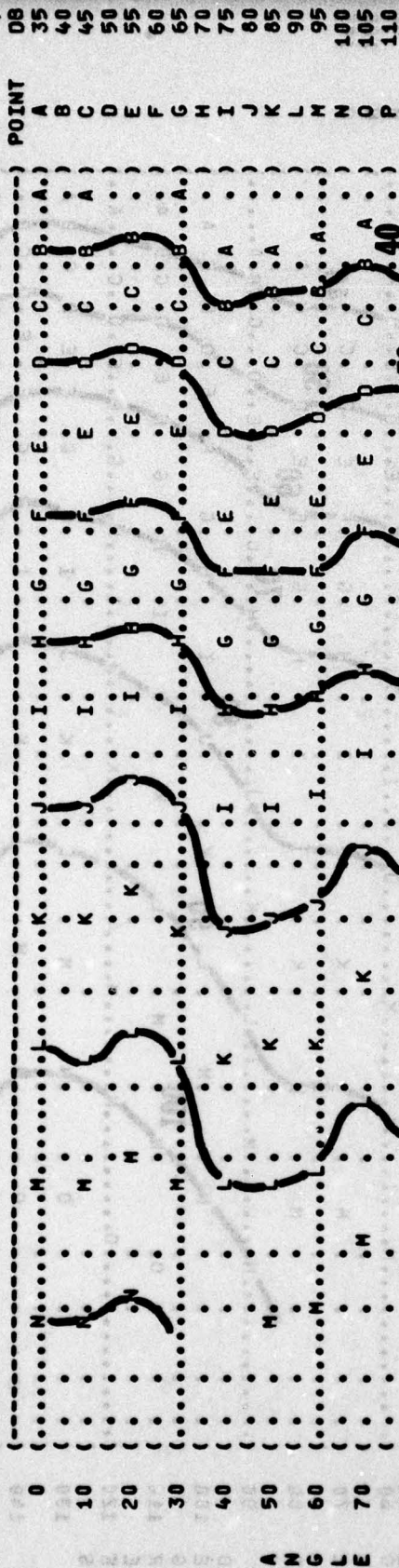
### IDENTIFICATION:

**OMEGA 1.4**

**TEST 75-002-049**

RUN 05

10



DISTANCE FROM SOURCE (METERS)

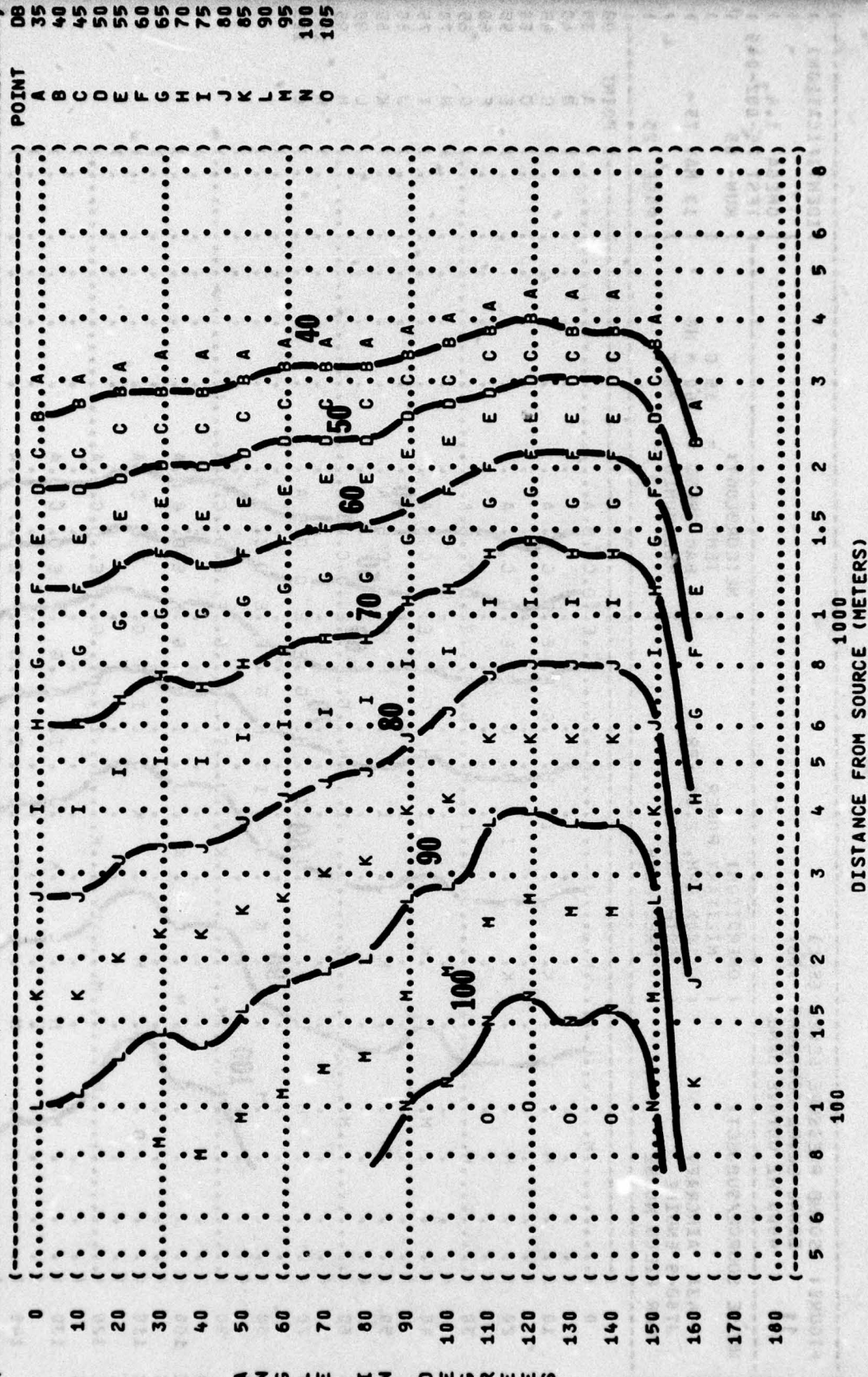




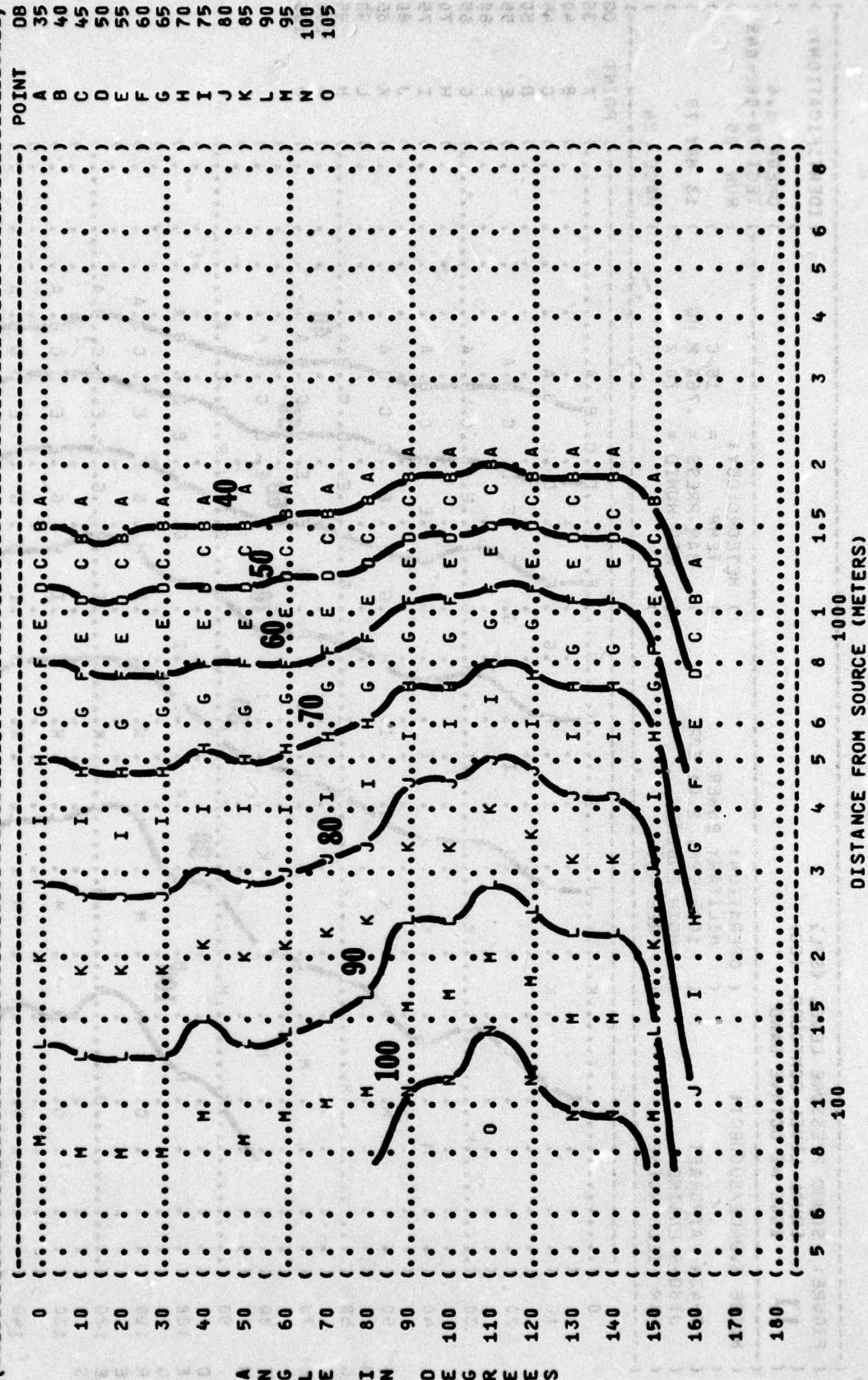
FIGURE: SOUND PRESSURE LEVEL (SPL)  
 EQUAL LEVEL CONTOURS (DB)  
 2000 HZ OCTAVE BAND

11

NOISE SOURCE/SUBJECT: ( ) OPERATION: ( ) METEOROLOGY: ( ) IDENTIFICATION: ( )  
 ( ) T-43A AIRCRAFT ( ) MILITARY POWER ( ) TEMP = 15 C ( ) OMEGA 1.4  
 ( ) JT8D-9 ENGINE ( ) 100% RPM, 2.01 EPR ( ) BAR PRESS = .760 M HG ( ) TEST 75-002-049  
 ( ) FAR FIELD NOISE ( ) BOTH ENGINES ( ) REL HUMID = 70 % ( ) RUN 05  
 ( ) ( ) FREE FLOW ( ) ( ) ( ) PAGE 24



( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 4000 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( ( OPERATION: )  
 ( ( MILITARY POWER )  
 ( ( 100% RPM, 2.01 EPR )  
 ( ( BOTH ENGINES )  
 ( ( FREE FLOW )  
 ( T-43A AIRCRAFT )  
 ( JT8D-9 ENGINE )  
 ( FAR FIELD NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-049 )  
 ( RUN 05 )  
 ( 13 MAY 75 )  
 ( PAGE 25 )





( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 8000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( T-43A AIRCRAFT ( MILITARY POWER  
 ( JT8D-9 ENGINE ( 100% RPM, 2.01 EPR  
 ( FAR FIELD NOISE ( BOTH ENGINES  
 ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-049  
 ( RUN 05  
 ( 13 MAY 75  
 ( PAGE 26

